THE ARCHITECTS' JOURNAL

standard contents

every issue does not necessarily contain all these contents, but they are the regular features which continually recur.

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THE ARCHITECTURAL PRESS

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Registered as a Newspaper.

★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, " Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRDB	British Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 5491
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. Tilbury House. Petty France, S.W.1.	Abbey 7080
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated), Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 67, Oxford Street, W.1.	Gerrard 0021
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organisation, Ltd., Melbourne House, Aldwych, W.C.2.	Temple Bar 4561
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. 67, Oxford Street, W.1.	Gerrard 0021
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215

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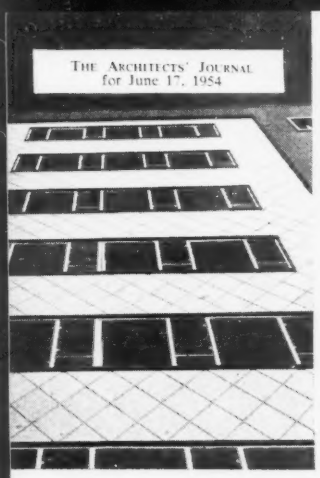
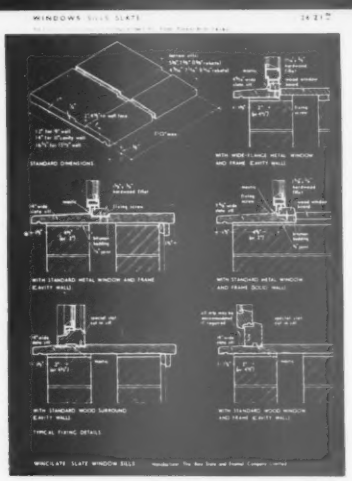
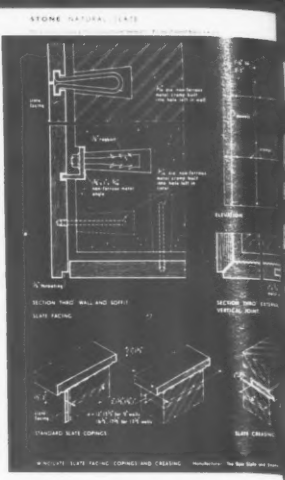
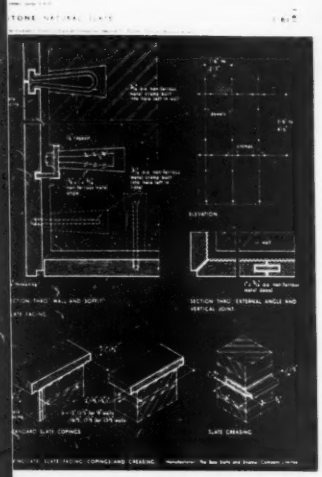
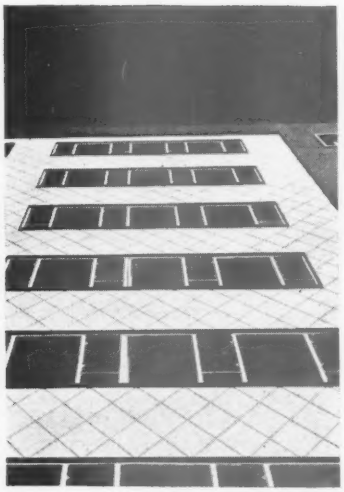
for June 17, 1954

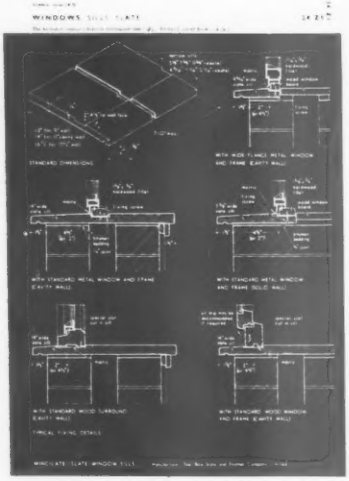


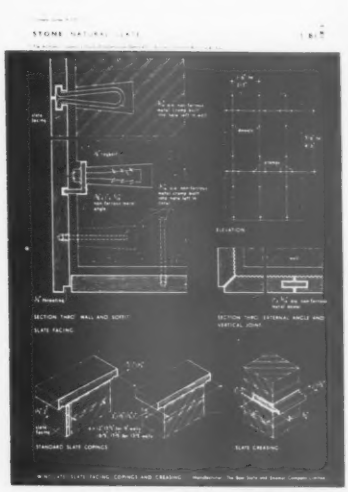


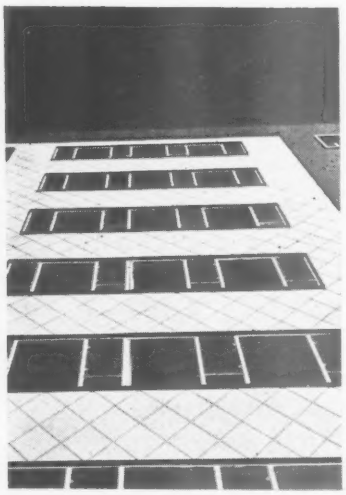


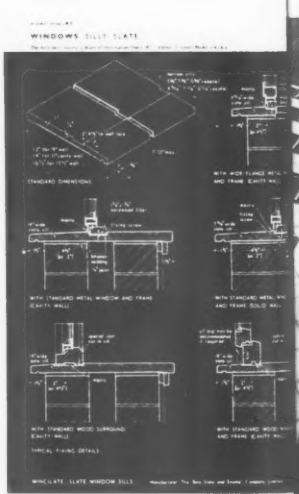


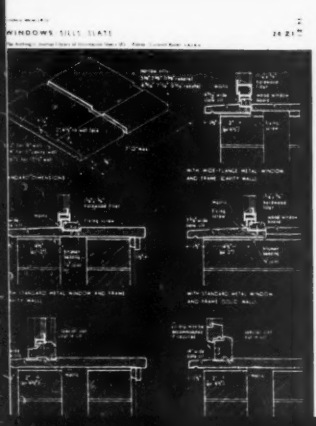


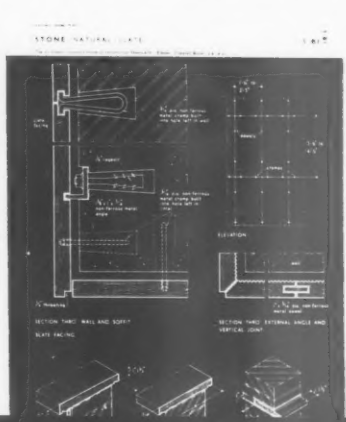


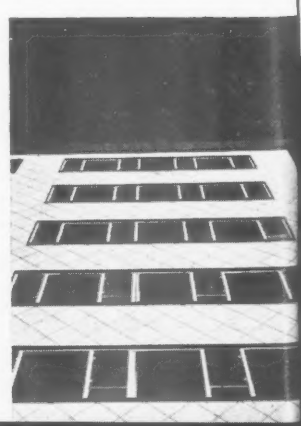












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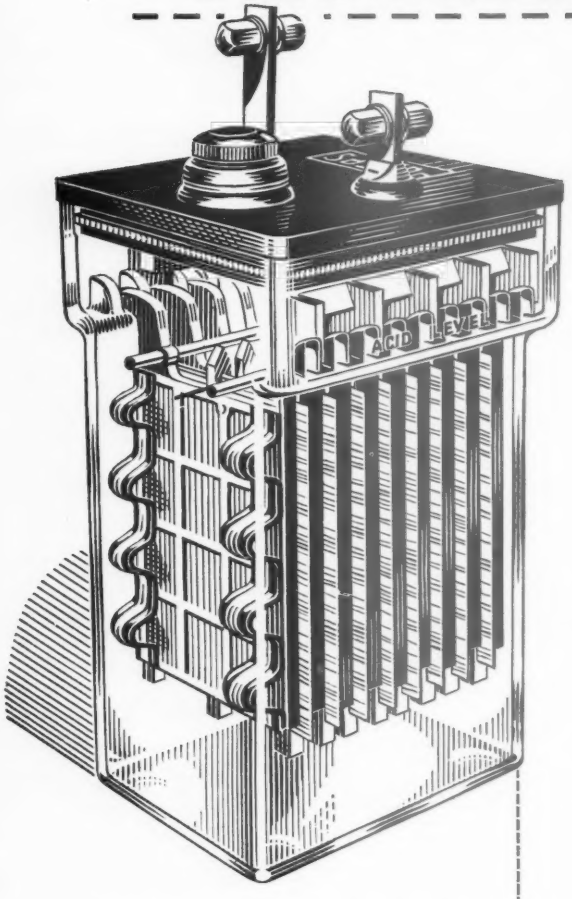

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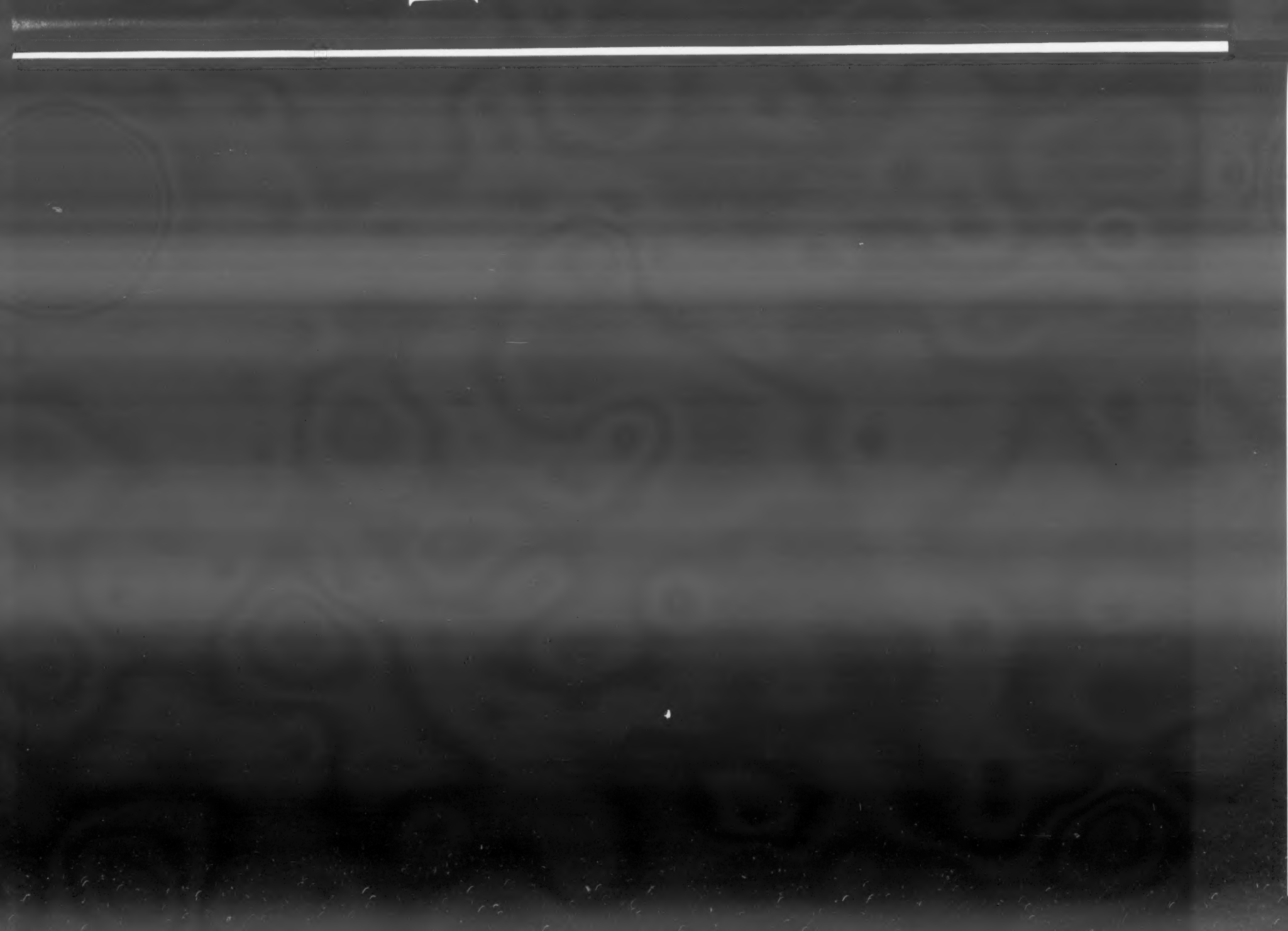

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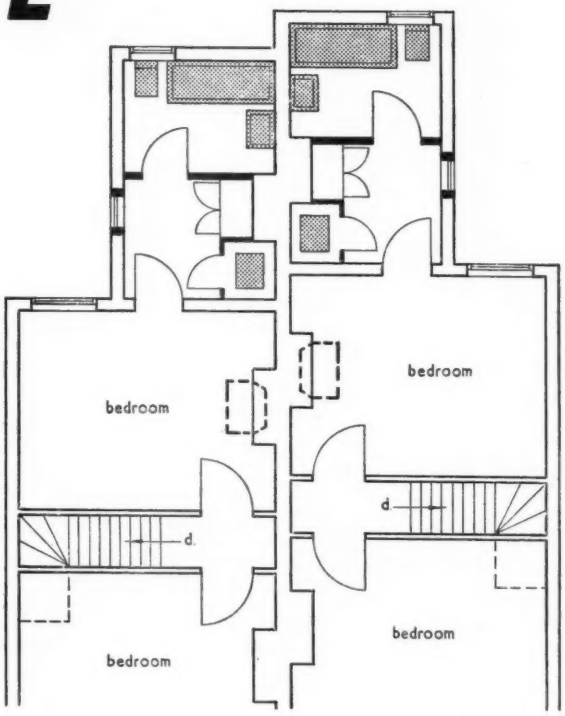

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as with all conversion work, if a real job is to be made of the pipework with the minimum of structural disturbance there is much troublesome work of tucking pipes away and threading them through the structure. Such work is made much easier, and time and trouble saved when the plumber is working with lead pipe—because of its unique flexibility.

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B.110/12/53

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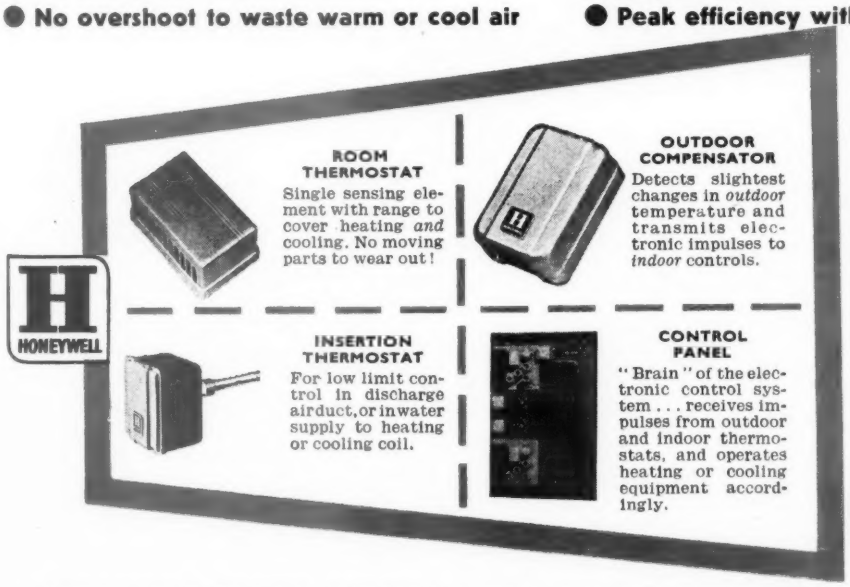

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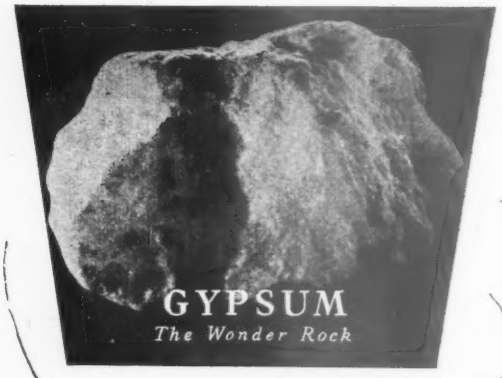

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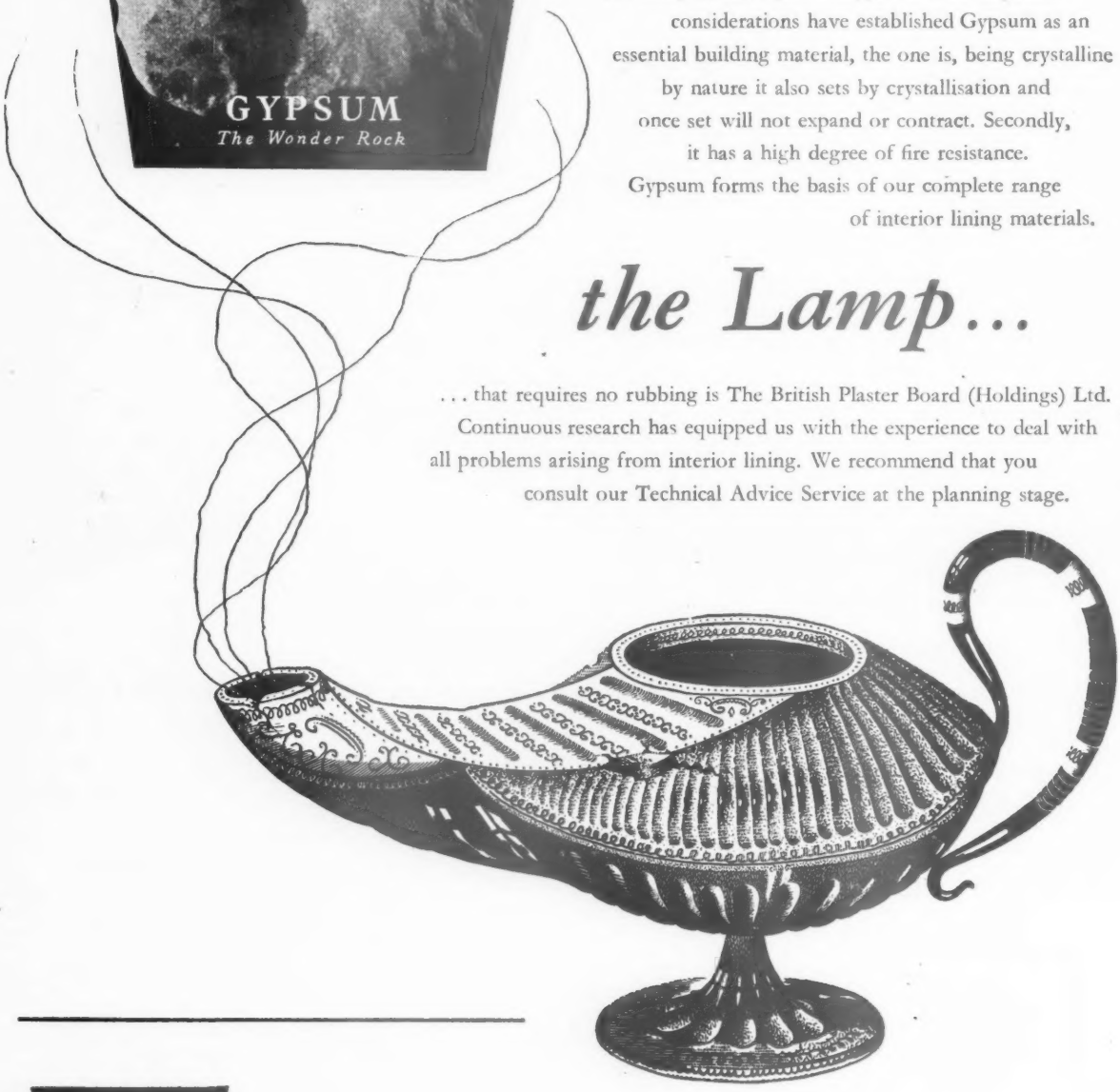

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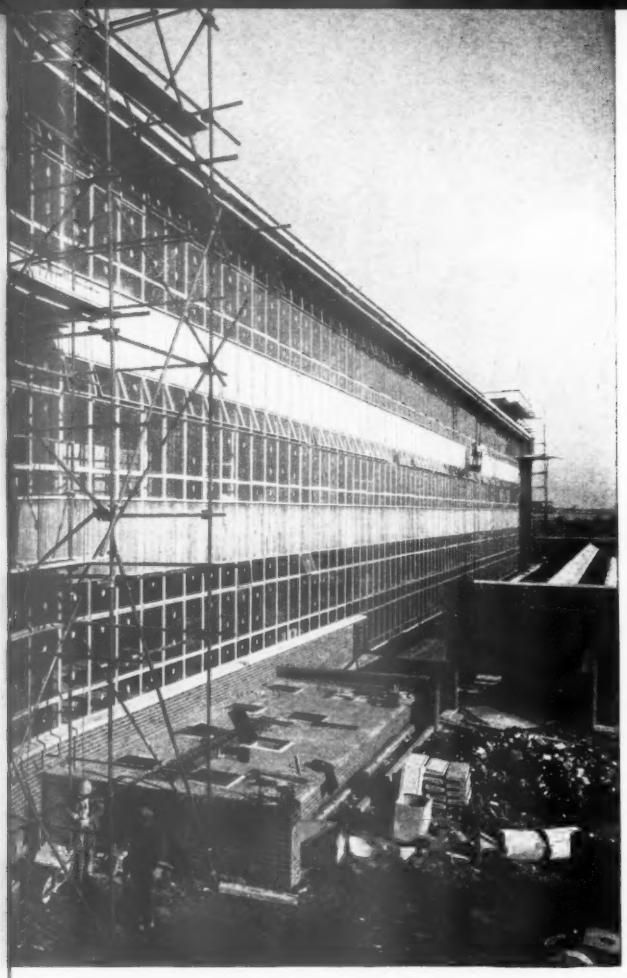

KETTERING TECHNICAL INSTITUTE

Architect : A. N. Harris, F.R.I.B.A., County Architect.

Both front and rear facades of this building comprise continuous parallel runs of purpose-made metal windows, separated horizontally by narrow infillings of red cedarwood vertical slatting. Three such windows run 250 feet long, to a total height of 34 feet, giving the 8,500 square feet of the front facade an almost complete glass effect, uninterrupted by any visible piers or stanchions. The erection of these 'mammoth' glass facades necessitated a special travelling and vertical gantry from which the work could be carried out.

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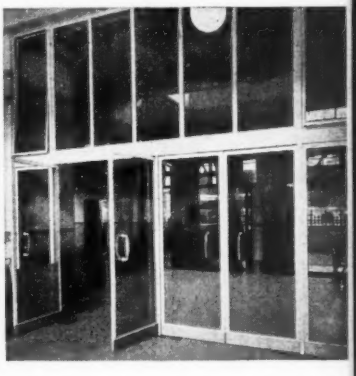

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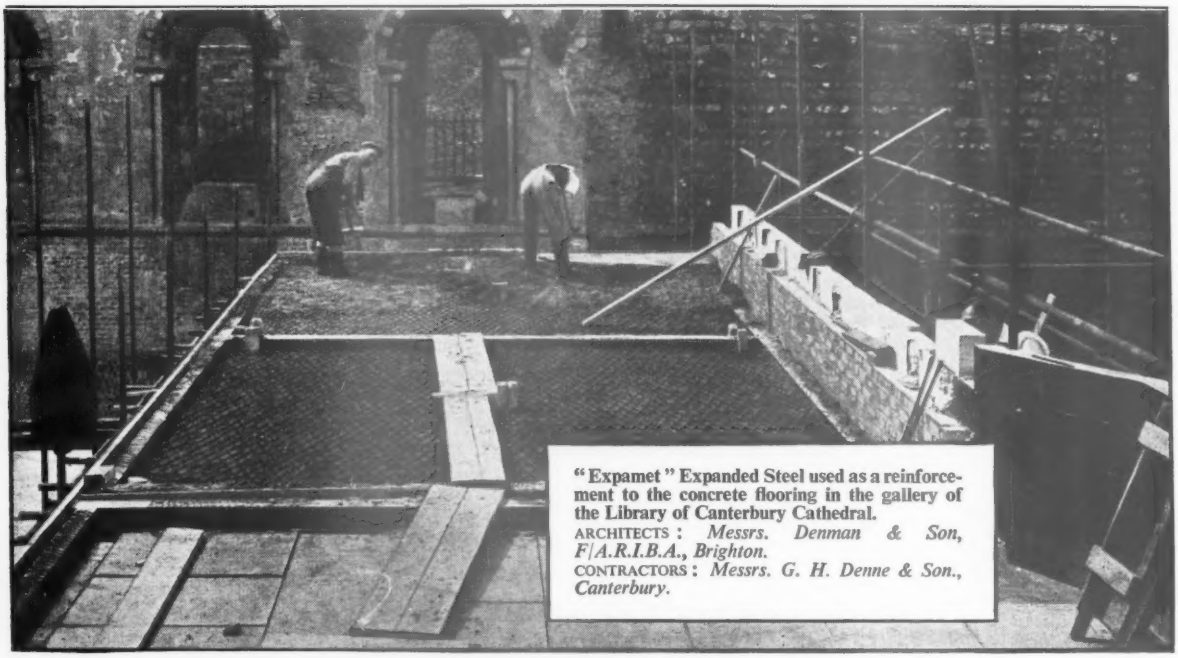

"Expamet" Expanded Steel used as a reinforcement to the concrete flooring in the gallery of the Library of Canterbury Cathedral.
ARCHITECTS: *Messrs. Denman & Son, F/A.R.I.B.A., Brighton.*
CONTRACTORS: *Messrs. G. H. Denne & Son., Canterbury.*

'Expamet' Expanded Steel used in reinforcement of the Library of Canterbury Cathedral

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This adaptable reinforcement is produced in a very large number of standard sectional areas; the weight of fabric varying from 2 lbs. to over 30 lbs. per square yard. Sheets can be supplied cut to size—thus eliminating waste and loss of time. "Expamet" is indeed a 'tailor-made' reinforcement.

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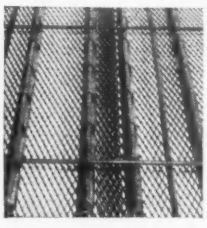

By its use the advantages of monolithic construction are obtained in the construction of concrete floors, roofs and similar decking, without the expenses of preparing, erecting and dismantling close boarded shuttering. Standard sizes are 3' 0" wide short way of mesh by 4' 0" to 15' 6" long inclusive, rising by 6" at a time.

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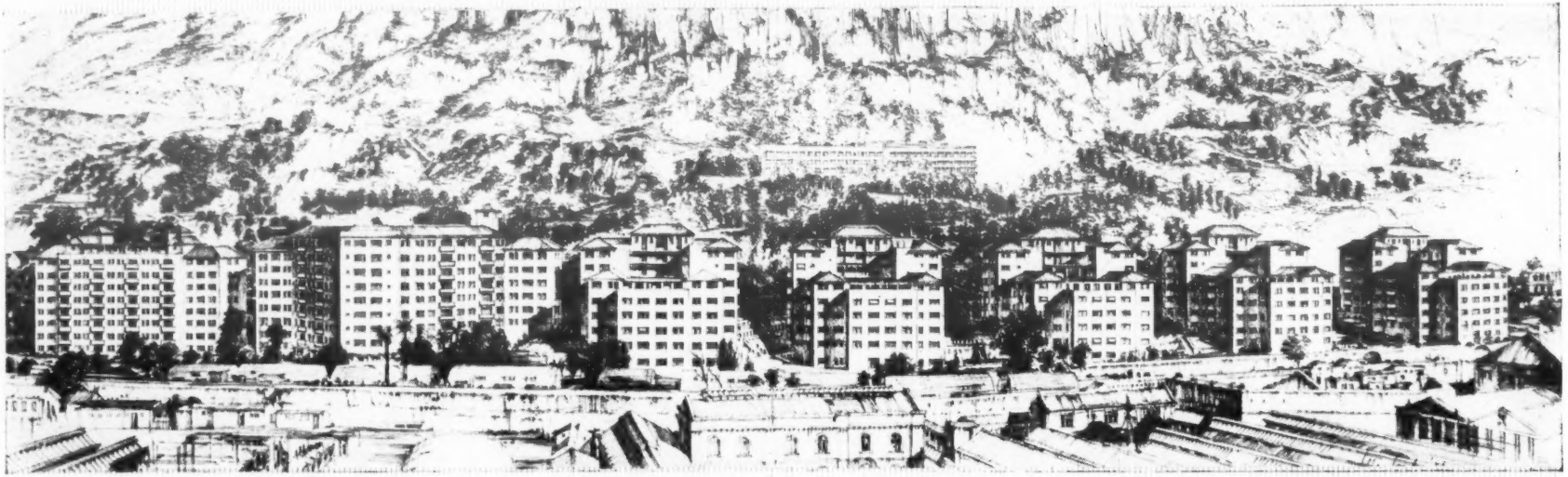

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THE GOVERNMENT OF GIBRALTAR

Architect: Robert Atkinson, F.F.R.I.B.A.

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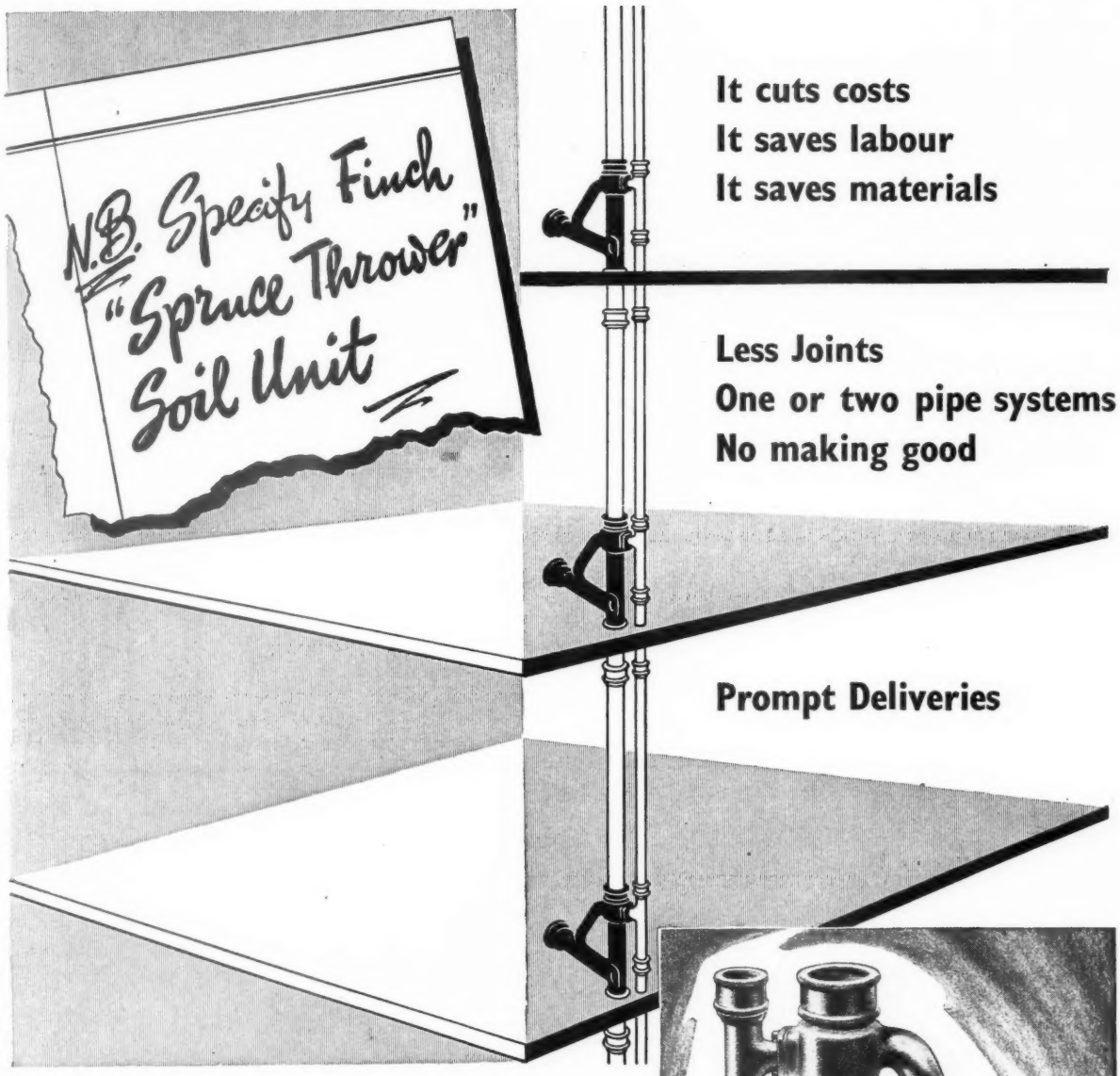

It cuts costs
It saves labour
It saves materials

Less Joints
One or two pipe systems
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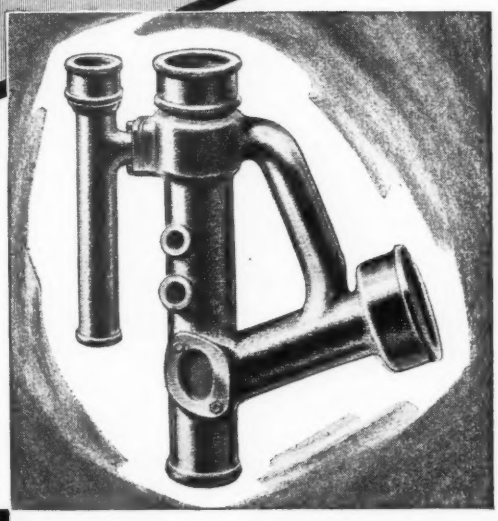

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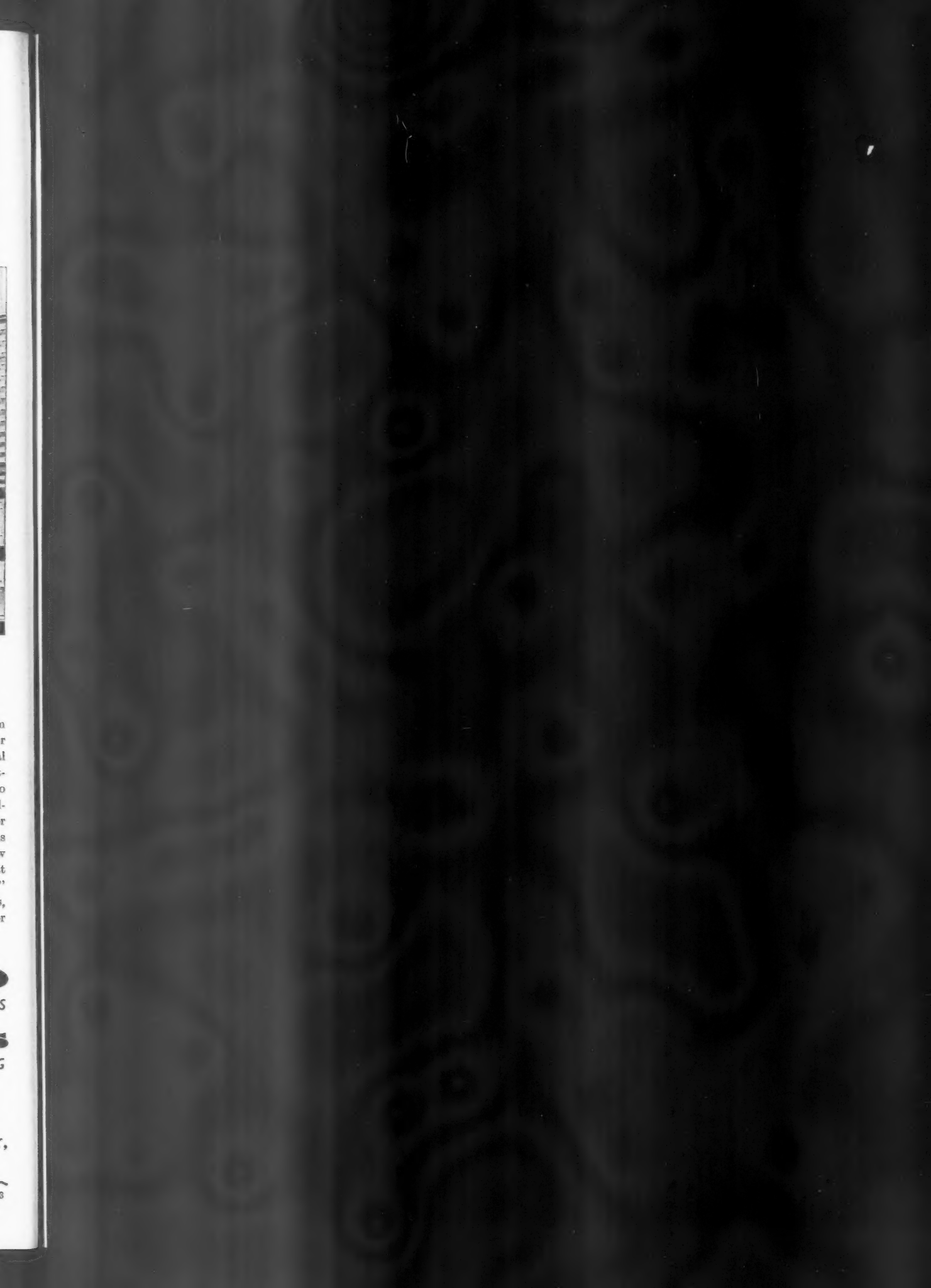

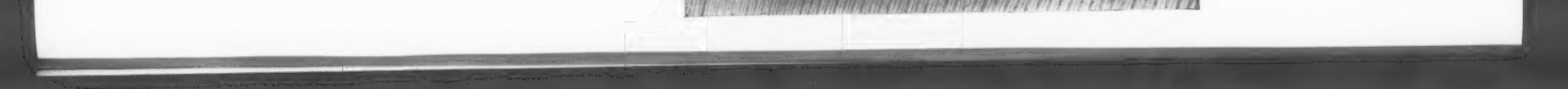

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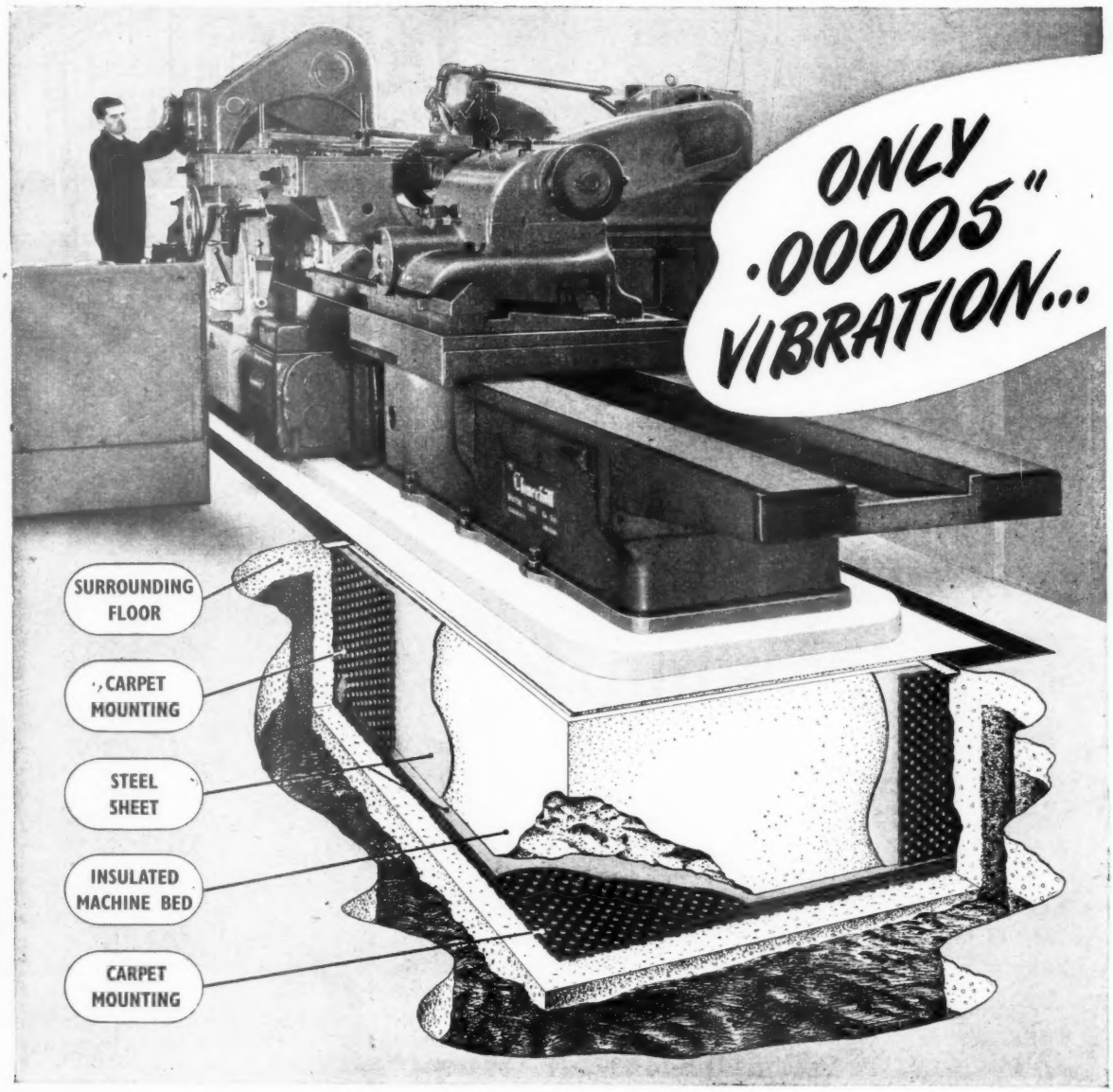

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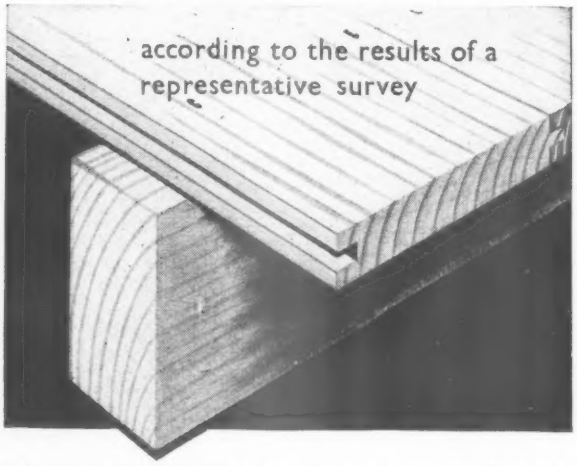

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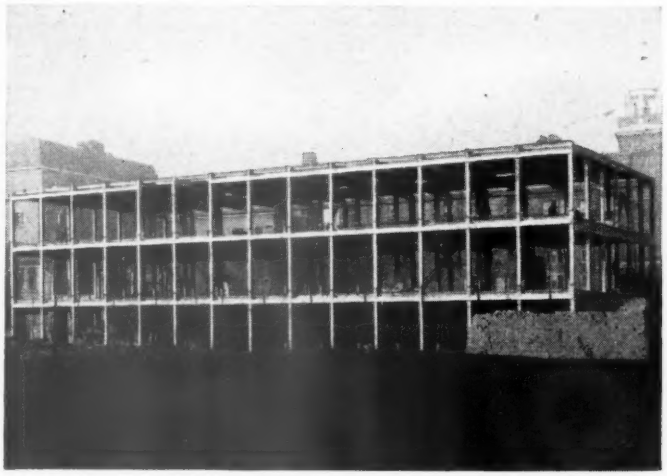

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Right: Taken from above this photograph illustrates the floor and roof slabs.

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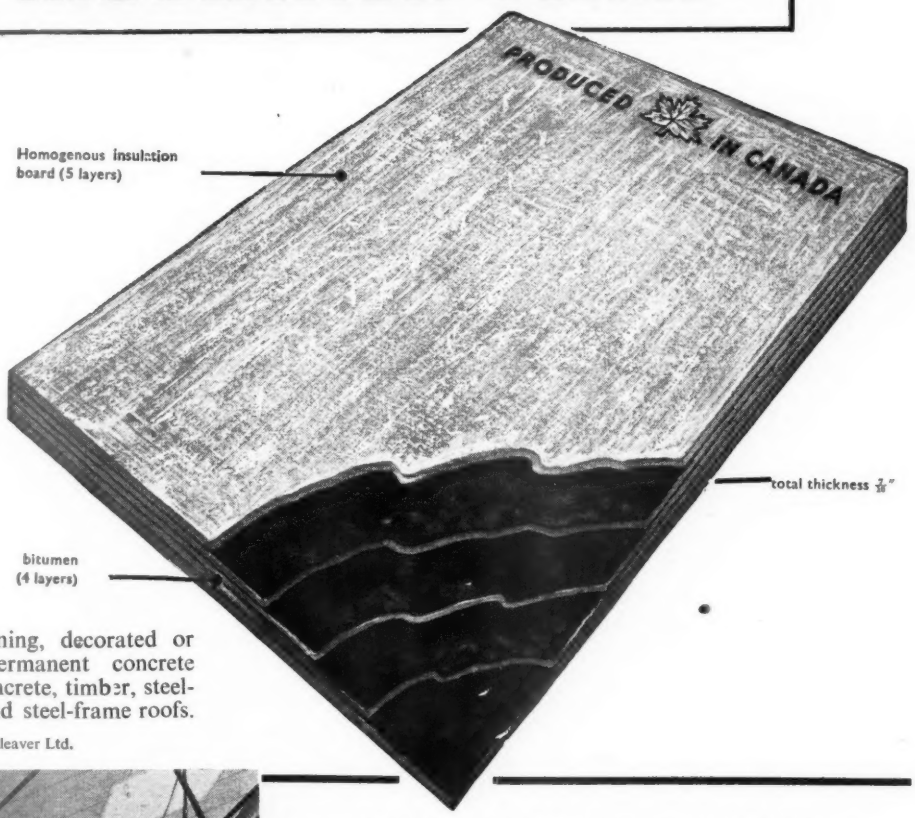

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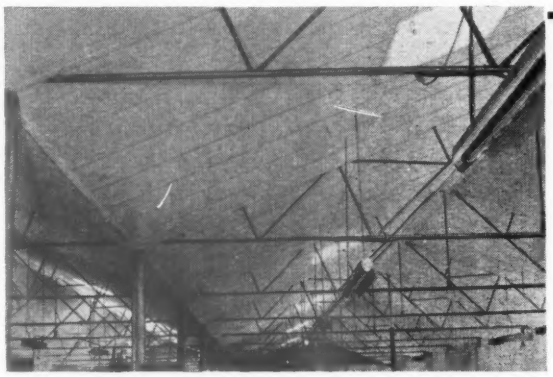

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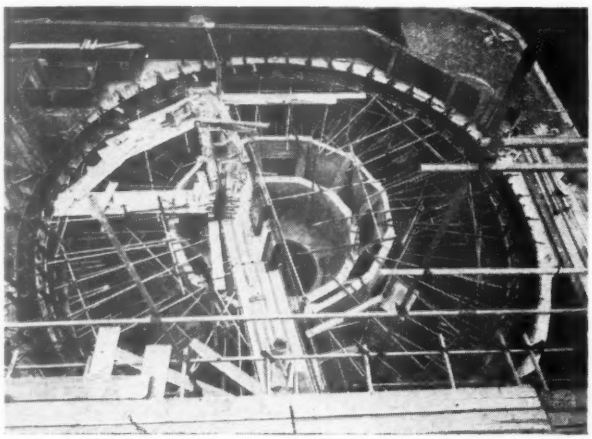

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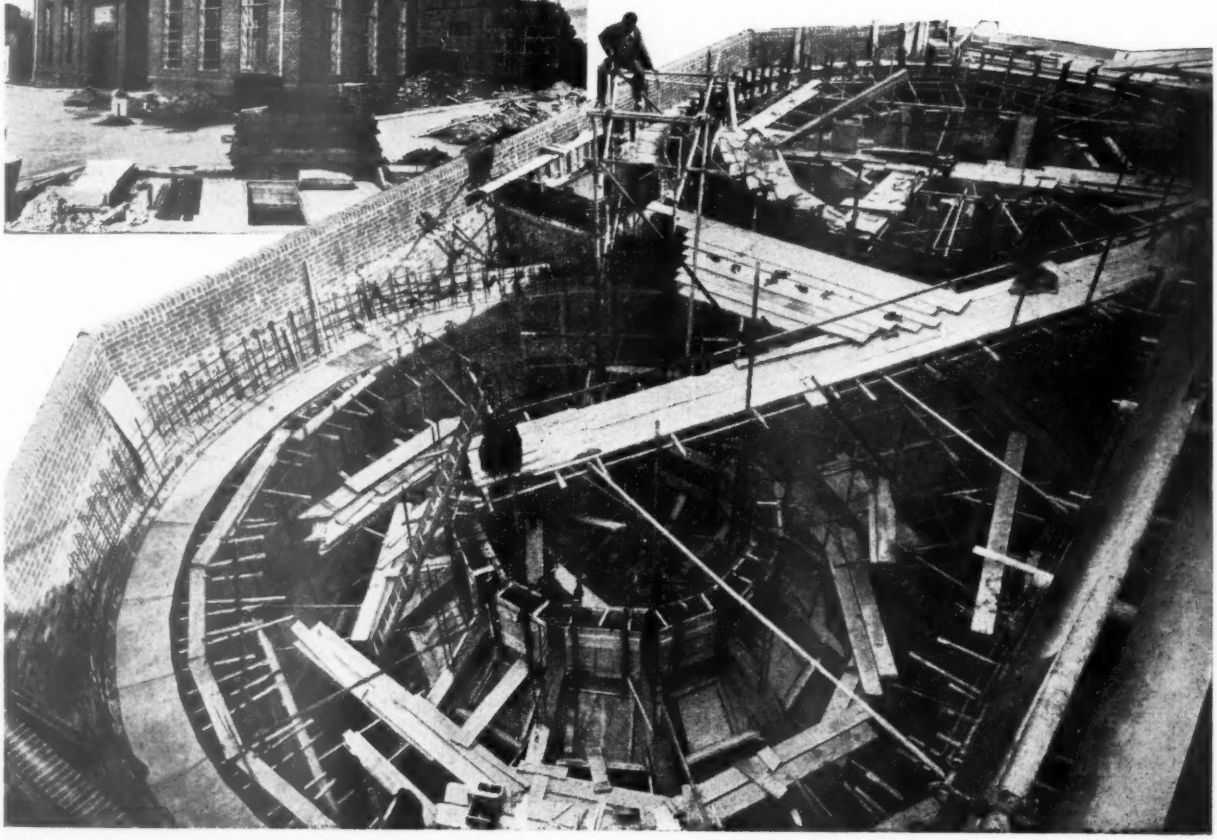

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THE ARCHITECTS' JOURNAL

9, 11 & 13, Queen Anne's Gate, Westminster, London, S.W.1 Whitehall 0611

No. 3094 June 17, 1954 VOL. 119

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HIGH WIMBLEDON

To round off their series of evening discussion meetings on contemporary building schemes, the ICA could not have chosen a better subject than the LCC's Ackroydon Estate at Wimbledon Park Side. The first eleven-storey point-block has just been opened (it is illustrated on page 725) and a group of three-, four- and five-storey flats has just been given a Housing Ministry medal. The estate gives the public its first glimpse of the end-product of the revolution that took place in LCC housing some while ago, as a result of which the council is now leading not only the country but most of the world in this field.

It was a tribute to the interest this work is arousing that sixty ICA members felt it worth making the journey to the site on a wet and chilly evening. They splashed happily round the partly finished flats, maisonettes and houses laid out among magnificent forest trees, admired the view from a couple of unoccupied flats at the top of the point-block, listened afterwards (in the adjoining LCC school) to a lucid exposition by Whitfield Lewis of the policies behind the ambitious LCC housing plans in this area and kept him and his colleagues answering apt and well-informed questions for over an hour.

*

The top floor of the point-block, with its spacious rooms and splendid tree-top views ranging over miles of common and parkland, yet convenient for getting to central London, would be hotly competed for if commercially let, even if the rents were in the £1,000-a-year class. In fact the lucky tenants, allotted the flats from the LCC housing list, pay 33s. a week, including rates.

*

ASTRAGAL, for one, is glad that outstandingly good design should be placed within the reach of the man-in-the-street.

DISREPUTABLE ELEMENTS

While ASTRAGAL was listening to the discussion on the Ackroydon Estate, one of his spies was at the Bartlett School, listening to a lecture with the remarkable title of *Disreputable Elements in Modern Architecture*, given by Reyner Banham. The talk proved, alas, not to be a libellous disquisition on the principles of unprofessional conduct, but a humorous sermon on a text from le Corbusier—" Merci, but if you have not touched my heart that is not architecture "—the theme being that expression of function, honesty with materials, innovations in technique and so forth have never made great architecture, and certainly not modern architecture.

*

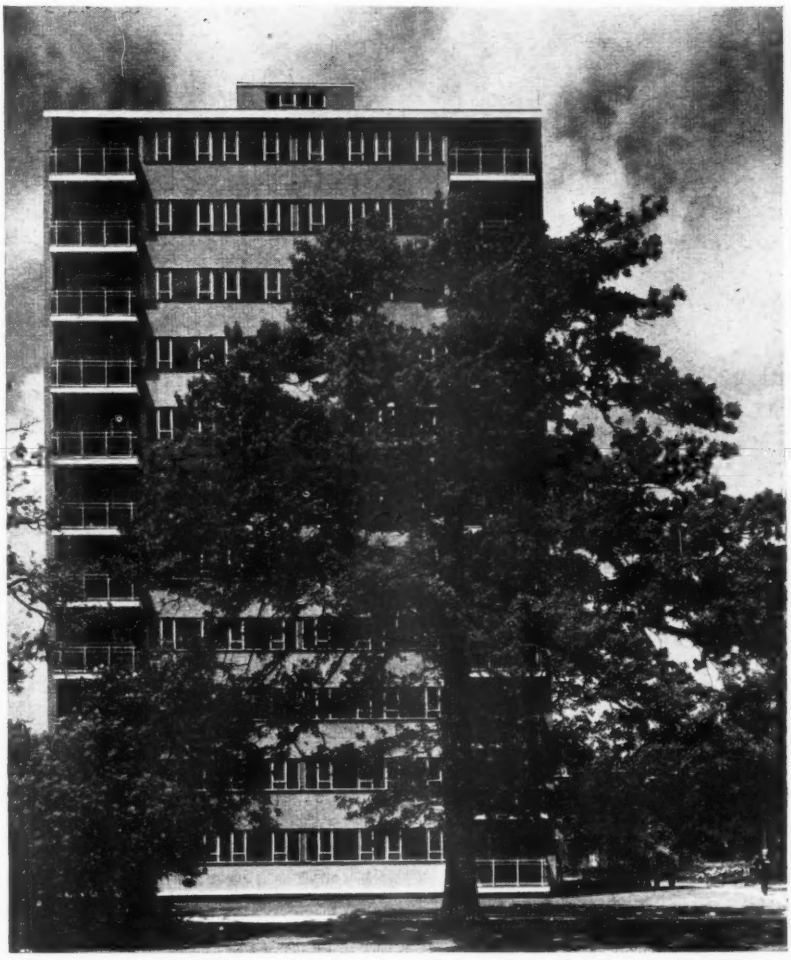
This the speaker set out to prove by tracing the family tree of Mies van der Rohe's Farnsworth House back, through some disreputable characters, to a mangled nude by Picasso and the Futurist Manifesto, or as he put it " to the victim of an artistic trunk-murder, and a car crash near Turin." The audience applauded loudly, chiefly, my spy suggests, because the lecture was a change from those they normally hear in Gower Street. It hardly needs to be added that these proceedings were organised by the students themselves, and not by the school.

PALLETIZATION

As a tower crane fan, ASTRAGAL looked in on the Mechanical Handling exhibition in case there was one on view, but he had to be satisfied with an immense mobile crane with jib nearly touching the roof of Olympia, terrifyingly large in bright orange paint. For the rest, the fork lift truck seems to be the centre of fashion and palletization is what they call the science of its use. Palletization has yet to penetrate the building trade but ASTRAGAL'S spies report that BRS and one or two of the big contractors are working on this for the handling of bricks, so perhaps we are seeing the last of the " bucket chains " of men method, picturesque though it is.

VANBRUGH ANALYSED

Many of you will remember Laurence Whistler's life of Vanbrugh (published



The first of three "point" blocks to be completed by the LCC at Ackroydon Estate, Wandsworth. It contains thirty-two flats. Other completed parts of the estate, which will eventually include maisonettes, flats, houses and shops, will be illustrated in next week's JOURNAL. *(Architects: Housing Division of the LCC's Architects Department, under Architect to the Council, Dr. J. L. Martin. Principal Housing Architect, H. J. Whitfield-Lewis; assistant housing architect; Michael Powell. Architect in charge of the work, H. G. Gillett, assisted by A. P. Roach.)* *See note on page 723.*

in 1938) as one of the most agreeable architectural biographies of this generation. Now he has followed it up with an even more scholarly, and deeply perceptive, volume* on Vanbrugh in relation to other architects of his time. This kind of aesthetic—as distinct from functional or historical—analysis of great architecture has been as out of fashion lately as have the rhetorical styles associated with the name of Vanbrugh, but its reintroduction, when accompanied by the literary grace and understanding of architectural principles Mr. Whistler has brought to his task, is therefore all the more welcome.

Very much in fashion, on the other hand, is Nicholas Hawksmoor's austerer classicism with its surprisingly modern emphasis on the basic geometry of architectural elements, and Mr. Whistler's special concern is to disentangle Hawksmoor's work from Vanbrugh's in the many designs on which they were jointly engaged and to distinguish the influence of each on the other. A quantity of new material (such as unpublished Vanbrugh letters) helps him to interpret the workings of Vanbrugh's mind. To this reader at least, the surprising thing is that Vanbrugh is revealed as an architect of basic simplicity, notably in his small houses and his military buildings at Woolwich, Chatham, Portsmouth and elsewhere.

* *The Imagination of Vanbrugh and his Fellow-artists.* By Laurence Whistler. London: B. T. Batsford (for Art and Technics). 1954. Price, 73s. 6d.

"Improvements" which are being carried out on the river wall at Chelsea are the subject of a note on page 727.

Honours for Architects

The Editors of the JOURNAL offer their congratulations to the two British architects whose names are included in the Queen's Birthday Honours. Howard Robertson, seen above at the RIBA, where his name appears in the panel of Royal Gold Medallists, ends his very successful term of office as the RIBA president with a knighthood. S. A. W. Johnson-Marshall (left) who, as chief architect to the Ministry of Education, is in the middle of a distinguished career, is receiving a CBE. It is singularly appropriate that Stirrat Johnson-Marshall's work should thus be officially recognized, for he—more than anyone else—has been responsible for achieving the country's international reputation for school design. He was the first deputy county architect at Herts., under C. H. Aslin. His success, he would maintain, is due largely to his ability to pick a good team of helpers (as shown by the MOE's Development Group) and to his understanding of the office conditions in which good work can most easily be done. It is also due, we would add, to the fact that he is a first-rate architect with more advanced ideas on the development of the building industry than anyone else in the profession.

CHELSEA WALL

Readers will remember the fuss that was made a year or two back when Chelsea Borough Council wanted to do away with the small boat anchorage and boat repair yard where the up-river end of Cheyne Walk curves round towards Lots Road power station. The plan was to create a new traffic artery and build it straight across the bay.

*

A loud outcry was raised when it was realized how this would destroy the last remaining stretch of riverside Chelsea and the last point where Chelsea residents and other Londoners can have close access to their river, and the scheme, having been condemned by the Royal Fine Art Commission and many other bodies, was dropped. It was decided to rebuild the river wall (which had become unsafe) approximately along the original line.

*

The work is now well under way, but as a result a new threat has emerged. The strengthened wall is being topped by a concrete parapet of unbelievable clumsiness which, if it is going to continue all round the bay in place of the charming brick parapet, with its simple coping, that now exists, will ruin the character of this stretch of the river-front that it was thought had been saved.

*

My pictures (on page 725) show the short stretch that has so far been built. Is it too late for the design to be changed, at least round the rest of the bay? The height of the parapet is presumably dictated by the need to keep out flood water, but there can be no such reason for the piers rising so far above the parapet. These are altogether too heavy and obtrusive and the textured panels on the pavement side of wall and piers do not help.

*

Chelsea Borough Council will earn all our gratitude if, realizing what harm this clumsy stretch of walling is on the point of causing to one of the few remaining stretches of London's old river frontage, they now change the design even if it means a little extra on the cost.

ASTRAGAL

POINTS FROM THIS ISSUE

Guest Editor

CONVERSION DEMONSTRATION

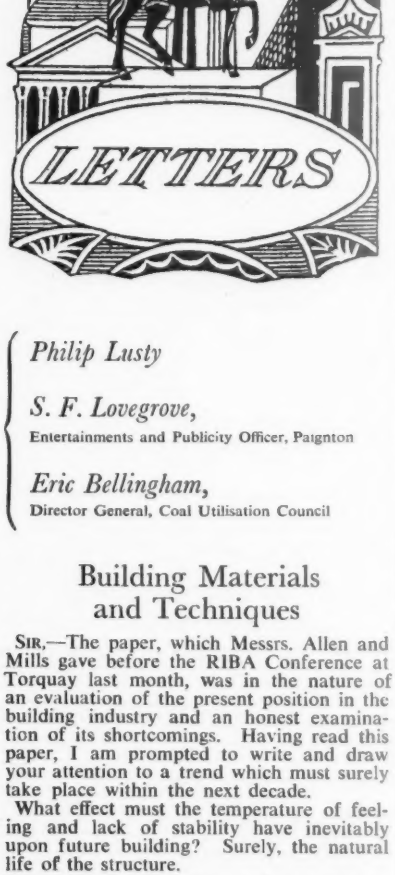
THE MOHLG, which intended to build replicas of four early 19th century houses at the Ideal Home Exhibition—to demonstrate the means of converting such premises, was prevented from doing so by the electricians' strike. But someone decided that these replicas must be shown to the public somehow, and they now stand near Oxford Street*, inviting one obvious critical question: why did the Ministry not spend its money on a "live" conversion exhibition—something that could be lived in when its "message" had been adequately put across?

If that question is too reminiscent of a certain newspaper's nightly soft-soaping of "you, the tax-payer," let us ask a more pertinent one. How useful is this exhibit to local authorities, houseowners, builders and the public? That depends on how bright they are and whether they see it out of idle curiosity or in search of information. If they really want information they will not be very lucky. Certainly the Ministry's suggestion that visitors "will be able to see the last detail" is inaccurate, for conversion does not end when flat planning is complete. The houses in Clarence Gardens, St. Pancras, on which this exhibit is based, have basements and back areas. How are these to be used? Does the cost of conversion per unit (quoted as £785) include improvements in basement or area? One suspects not, but the Ministry does not make this clear. Nor does it explain where prams and bicycles are to be kept.

Another point the Ministry fails to make clear is that the cost of £785 per unit for conversion does not include maintenance and repair work, for which no grant is available. A 50% grant on any amount up to £800 seems pleasant enough until one realises that some property of the type exhibited carries a repairs bill as high as 30 or 40 per cent. of the conversion costs.

The Ministry has failed to do justice to an imaginative idea. It should have given facts and figures so that visitors to the expensive exhibit could go away with a knowledge of all aspects of the conversion problem. As it is, hard things will be said—and *should* be said—on behalf of "you, the tax-payer."

* See also page 728.



Philip Lusty

S. F. Lovegrove,
Entertainments and Publicity Officer, Paignton

Eric Bellingham,
Director General, Coal Utilisation Council

Building Materials and Techniques

SIR,—The paper, which Messrs. Allen and Mills gave before the RIBA Conference at Torquay last month, was in the nature of an evaluation of the present position in the building industry and an honest examination of its shortcomings. Having read this paper, I am prompted to write and draw your attention to a trend which must surely take place within the next decade.

What effect must the temperature of feeling and lack of stability have inevitably upon future building? Surely, the natural life of the structure.

In the past, the builder believed that he was creating for all time and on his departure would leave behind a tangible monument to his being. This is not valid today for two main reasons:

(1) An economic one—the cost of many traditional methods of construction are fast becoming prohibitive, due to the impossibility of mechanization and consequential high labour content at inflated rates.

Few countries will soon be able to afford the luxury of the old type building, except for their most important civic edifices.

(2) Changing concentrations of population—this is usually brought about by considerations of political and physical conditions. In the former case, people move because they no longer feel able to live under the existing regime, whilst in the latter, because conditions for themselves and their children may be better elsewhere by virtue of greater mineral wealth of industry, or less cold, famine, earthquake, or war.

Admittedly, this has been going on since the beginning of time, but in the last fifty years we have seen a greater increase in travel than ever before and this will undoubtedly continue.

There would appear to be only one solution to this problem—*industrial production.* Advantage must be taken of the capacity and potential of our factories to replace what is being lost. Mass-production in this industry, like many others, must—if correctly applied—bring about a substantial lowering of prices and an improvement in quality. At the same time, manufactured components must be made readily demountable, so that a need can be met fully and quickly and just as easily removed or increased, as conditions warrant.

An analogy with the motor-car might not be out of place here. At the turn of the century, cars were "built like a gun" and were cumbersome, heavy, ugly and expensive, but would, and have, easily lasted fifty years. Today, the buyer of a slick duotone automobile would not expect much to remain after ten years, but during that period the purchase will give comfort and speed, maintain attractive appearance and, withal, be modest in first cost. Is this a retrograde step? Never. Value is put into fitness for present purpose and not long life.

To return to this industry. If this trend is applied to building, is there likely to be a reduction in standards? On the contrary, if evidence from other trades is any guidance, then we may confidently expect a lowering of prices and improvements in the following features:—

(*a*) better thermal insulation
(*b*) better sound insulation
(*c*) more efficient heating, at less cost
(*d*) better labour-saving devices
(*e*) use of materials that are easier to keep clean
(*f*) better mechanical properties for moving parts.

Take an example which can be readily understood by us all—housing. Is it a pipe-dream to imagine a home bought complete for, say, £800 of today's money, which provides the above amenities for present circumstances, but may well have to be scrapped and pulled down at the end of a decade, due to the fact that it is worn out and no longer adequately fulfils the function for which it was obtained, or that the erstwhile owner wishes to go and live somewhere else? This example is equally applicable to schools, flats, factories and hospitals.

Value should be put into fitness for present purpose and not long life.

PHILIP LUSTY.

Lincoln.

Paignton Defended

SIR,—I have recently seen the article in your issue dated May 25, written in connection with the recent RIBA Conference held in Torquay.

Whilst I am not qualified to dispute your contributor's comments regarding the architecture in Paignton, I would inform you that many of the professional and business people in this town have taken great exception to the allegation that Paignton is "dead for half the year." This we consider to be a most irresponsible statement, entirely without fact, since we have visitors here throughout the whole of the year—cold east winds or no!

If your contributor visited this area, it is rather a pity that he did not call at this office, when we could have given him information and assistance which may have led him to have written an article showing the holiday resort of Paignton in a more favourable light as distinct from its architectural shortcomings.

S. F. LOVEGROVE.

Paignton.

Flues on Outside Walls

SIR,—After the last freeze-up, some farmers were discussing their losses. One said proudly that he had lost no lambs because his sheep had all huddled round a wall of his farm in which there was an outside flue that kept them warm. Householders are more interested in keeping themselves warm than in warming the outside walls of their houses; yet architects persist in designing houses with flues which, being on outside walls, waste a great deal of heat that might have been kept inside the house.

In your RIBA Conference Number I have counted twenty illustrations of houses (presumably regarded favourably) with flues on outside walls. These have been designed by architects in the south west, where fuel is not particularly cheap. Is the south west so warm that little or no fuel is needed, or are architects simply indifferent to the size of their clients' future fuel bills?

ERIC BELLINGHAM.

London.

HONOURS

RIBA President in Birthday List

Howard Robertson, the retiring president of the RIBA, was awarded a knighthood in the Queen's Birthday Honours. A JOURNAL photograph of Mr. Robertson, which was specially taken this week, appears on page 726 of this issue, together with a picture of the chief architect to the MOE, S. A. W. Johnson-Marshall, who was given a CBE. The same award was conferred upon H. J. Rayner, chief quantity surveyor to the MOHLG.

The OBE was given to W. J. Eves, chief estimating surveyor to the MOW, and to E. E. Hall, senior housing inspector to the MOHLG.

The deputy county planning officer for West Sussex CC, S. H. Baker, was awarded the MBE. The same honour went to W. R. Beardall, engineer and surveyor to Boston (Lincs.) RDC, and to Miss M. C. Solomon, secretary to the Housing Centre Trust.

Other knights in the Birthday Honours were Richard Costain, chairman and joint managing director of Richard Costain Ltd., and the Australian architect, Arthur George Stephenson, who received this year's RIBA Royal Gold Medal.

MOHLG

Conversion Exhibition

Conversion of the sub-standard terrace house, writes our Guest Editor (Conversions), was to have been the theme of the MOHLG's contribution to the Ideal Home Exhibition. But the MOHLG was defeated by the electricians' strike. The exhibit, intended for Olympia, has now appeared in Holles Street and was opened yesterday by Harold Macmillan, Minister of Housing and Local Government, for inspection by the general public.

A brief description of this exhibit has already appeared in the JOURNAL (Febru-

ary 18. The Ministry have reproduced four early 19th century houses from a terrace in Clarence Gardens, St. Pancras, and the intention has been to show that these essentially sound houses, although lacking present day amenities, and often too large for single family occupation, still have a useful purpose. The first of the four houses depicts present day conditions—faded wall papers, old grates, the lack of washing facilities and a fair collection of Victorian furniture not be mention a few choice heirlooms. (Effects and props by Ealing Stoudios.) The dwelling seems to suffer from an excess of cleanliness and polish, chair coverings (first floor) too new and the absence of lincrusta is disappointing.

The next two houses have been converted into three self-contained flats planned horizontally with one on each floor, thus providing homes for three families where two had lived before. The planning, as one might expect, is compact and the arrangement is sound; each unit contains a large living room, two bedrooms, kitchen bathroom and lavatory with hot water from a multi-point heater or stove fitted with a back boiler. Cooking is by gas or electricity. One or two variations are introduced to show planning flexibility—for example the top floor flat has a dining kitchen and partial central heating, the middle flat has a central corridor to give access to all rooms, and the ground floor flat a shower instead of a bath.

The WVS has furnished the top flat for less than £225 on the assumption that it is to be occupied by a skilled craftsman, his wife and two young daughters—old enough presumably to dispense with the pram for which no space has been provided. In the middle flat of John Lewis & Co. Ltd. have been responsible for furnishings—for a married couple and an unmarried daughter. (Again mercifully, no pram is needed.) On the ground floor the flat is used to show how the conversion is done and in the adjoining fourth house are examples of improvements to houses which can be carried out without conversion.

Displays of fires and stores are also provided by the Ministry of Fuel and Power and the Coal Utilisation Council.

(The JOURNAL'S Guest Editor comments on this exhibit in a letter on page 728.—ED.)

Housing Medals, 1954

The 1954 awards of Housing Medals and Diplomas offered by the Minister of Housing and Local Government, Harold Macmillan, for the best-designed local authority housing estates in England and Wales, have now been adjudged on the recommendations of the Regional Awards Committees. These awards, which are made with the support of the RIBA, "aim to encourage a high standard of house design and estate planning, and to recognize outstanding examples." New Town Corporations and Housing Associations are eligible to compete as well as local authorities.

The 1954 awards were chosen from 338 schemes. There were 44 more schemes entered for this competition than in 1953.

This time instead of competition being limited to schemes completed during the past year, the field of entry was extended to cover post-war housing schemes completed at any time up to December 31, 1953 (provided they had not been submitted in previous competitions).

Outside London there are two awards in each Region, for one urban scheme and one rural scheme. In the London Region there is one award for a scheme designed to accommodate 100 persons or over per net residential acre, and another for a scheme at less than that figure.

The Regional Awards Committees consist of nominees of the RIBA, the Associations of Local Authorities, the Federation of Registered House Builders and the MOHLG.

A medal, with a diploma signed by the Minister and by the chairman of the appropriate awards committee, is given to the architect or designer responsible for each winning design. A similar diploma is presented to the local authority, New Town Corporation or housing association concerned and to the building contractor responsible for the building work. In judging the entries the awards committees have taken into account the architectural quality of the houses and the layout and appearance of the estates. Regard has been paid to the economical use of land and services and the use of compact planning and economical and efficient methods of construction. Particular attention has been paid to schemes presenting attractive solutions to the special problems of design linked with the use of "People's Houses" or new tradition houses.

At the invitation of the President and the Council of the RIBA, the Minister will present the medals and diplomas at the Royal Institute on Wednesday, June 30.

Details of the awards are as follows:—

Northern: Lakes UDC; Greenbank, Ambleside: J. Jennings and J. C. Gill, Ambleside.

Hexham RD; Newbrough, Nr. Hexham: W. Dixon & Sons, Newcastle-upon-Tyne.

East and West Riding: Norton UDC; Crown Grove, Model Farm: F. Vaux, Bridlington.

Nidderdale RDC; Hampsthwaite: Needham, Thorp & White, York.

North Midland: No recommendations.

Eastern: Harlow Development Corporation; Orchard Croft: F. Gibberd, London.

Dunmow RDC; Weaverhead Close, Thaxted: G. A. C. Lacoste, London.

London: Southall BC; Bridge Hall: R. H. Uren, London.

LCC; Ackroydon, Wandsworth: J. L. Martin, Architect to the Council.

Southern: Swanage UDC; Bell Street: A. E. Geens, Bournemouth.

Kingsclere & Whitchurch RDC; Inhurst: E. D. Chick, Highworth, Wilts. Powell & Moya, London.

South Western: Plymouth CBC; Cecil Street: H. J. W. Stirling, City Architect.

Bridgwater RDC; Cannington: R. G. Nicholls, Bridgwater.

Midland: Coventry CBC; Tile Hill (North): D. E. E. Gibson, City Architect.

Shipston-on-Stour RDC; Barton-on-the-Heath: E. H. Earp, Stratford-upon-Avon.

North Western: The Charities of Mayes, Hartley and Sutton; Mayes Gardens, Ancoats: H. M. Fairhurst, Manchester.

Tarvin RDC; Clutton: T. Pritchard, Registered Architect, Surveyor to the Council.

South Eastern: Crawley Development Corporation; Site I, Three Bridges: A. G. Sheppard Fidler, Chief Architect to the Corporation (now City Architect, Birmingham).

Battle RDC; Trojans Plat, Winchelsea: A. H. Neave, Battle.

Wales: Beaumaris BC, Beaumaris Housing Association; Cae Bricks: S. C. Foulkes, Colwyn Bay.

SCHOLARSHIP

Award by Trussed Concrete Steel Company

The Travelling Scholarship offered by the Trussed Concrete Steel Co. Ltd., details of which were given in the JOURNAL of February 11, has been awarded to W. A. Gibbon, B.A., A.R.I.B.A., of Manchester.

COMPETITION

Canadian House of Tomorrow

The assessors in the international competition for the "Canadian House of Tomorrow"—organized by the McGill University School of Architecture for Calvert House—have made their award. There were over 650 designs entered for the competition which was not open to USA architects. The award is:

International Award ($5,000): Knud Peter Harboe Hegelsvej 10, Charlottenlund, Denmark. *European Award* ($2,500): Gardner Ertman, 37, Buckingham Terrace, Edinburgh, Scotland. *Canadian Award* ($2,500): Geoffrey E. Hacker, 6, Eastgate, Winnipeg, Manitoba.

Honorable Mentions (each carrying a $200 prize): J.-L. Lalonde, 78, rue Blomet, Paris, France; G. S. Abram and J. B. Craig, 20, Lanbrooke Avenue, Willowdale, Ontario; H. Scasny, Geibelgasse, 8, Vienna XV, Austria; E. Defty, A.R.I.B.A. (British), 318, William James Hall, Harvard University, Cambridge, Mass.; R. R. Söderlind, Baunegärdsvej, 8, Gentofte, Denmark; Victor Prus, A.R.I.B.A., 15, Court House Avenue, Brockville, Ontario; J. D. Cordwell, A.R.I.B.A. (British), 4380, North Talman Avenue, Chicago 25, Illinois; J. Abma, Keizersgracht 814, Amsterdam, Netherlands; T. B. Gourlay, Stud. R.I.B.A., 25, Bywater Street, Chelsea, S.W.3; and G. M. Fullman, Stud. R.I.B.A., 9a, Honeyhill Road, Bracknell, Berks.

BRDB

Furniture Conference

A conference on "Latex foam in furniture" was held at the Caxton Hall on May 27 by the British Rubber Development Board. Papers were read on the design and manufacture of furniture using latex foam, and upholstery demonstrations were given. Among exhibits displayed were prototypes of two of the prizewinning chairs in the recent competition—one of which is going into quantity production.

The publicity material included an informative booklet by Dennis Young, design consultant to the BRDB, which discusses the technicalities of upholstering with latex foam, illustrated by "cut-away" perspective drawings. This should be useful to architects, it is called "Upholstery with Latex Foam" and is obtainable gratis from the BRDB.

DIARY

Council for Visual Education, Annual Meeting. Speaker: The Rt. Hon. the Earl of Euston, Deputy Chairman of The Society for the Protection of Ancient Buildings, on "The Appreciation of Old Buildings." Sir Patrick Abercrombie will preside. HC, 13, Suffolk Street, S.W.1. 2.15 p.m. JUNE 17

Exhibition of work by students of the LCC Central School of Arts and Crafts. At the County Hall, S.E.1. UNTIL JUNE 18

"Designed and Manufactured." Industrial Design Exhibition at the LCC Central School of Arts and Crafts, Southampton Row, W.C.2. JUNE 22 TO 25

Impressions of American Architecture by Denys Lasdun. Dinner at 7.0 p.m. Lecture at 8.0 p.m. At the AA, 34, Bedford Square, W.C.1. JUNE 23

A Policy for the AA. Meeting for members only. At the AA, 34, Bedford Square, W.C.1. 7.30 p.m. JUNE 30

The paper on Materials and Techniques, and the discussion which followed the reading of a summary of it, by William Allen, chief architect to the BRS, and Edward Mills, which was given at the British Architects Conference, Torquay, was described by C. H. Aslin, Herts. County Architect and Vice-President of the RIBA, when proposing a vote of thanks, as the most successful that had ever been given before an RIBA conference. Below is a report of the discussion, which was held on the Thursday and Friday mornings of the Conference, in Torre Abbey. The illustrations are from the collection of slides which the author showed, and they are accompanied by verbatim extracts from the paper. Edward Mills is shown, right, demonstrating various types of glazed and perforated bricks and blocks. William Allen is on his left, waiting to catch anything dropped.

A REPORT OF THE BRITISH ARCHITECTS CONFERENCE, TORQUAY, ON

MATERIALS AND TECHNIQUES

WILLIAM ALLEN, summarising his part of the conference paper, said: "Nowadays when you have a firmly constructed roof, which, if you do not take precautions, is to change length, an inch in every 150 feet, from day to night, summer and winter, you have to have some way of coping with the partitions and things inside, or of reducing that amount of dimensional change. The idea that buildings are always changing size is a good one to bear in mind when developing techniques." Referring to the forces of nature, Mr. Allen stressed the point made in the paper that architects must work out their building practice so that success "came natural." The forces of nature were going to win in the end, and architects were better off letting them have their way, or side-stepping them, rather than trying to beat them.

EDWARD MILLS referred to the exhibit of clay products from America and the Continent running concurrently with the conference, and said the audience would be surprised at the very high quality of the exhibits, which could not, as yet, be equalled in this country. One thing it was hoped would arrive in this country before long was the pulverised fuel ash brick. These were surprisingly like a normal brick, and if things went as was hoped, they should be not only in plentiful supply, but reasonably economical as well. In these was an example of a waste product which could be turned to a practical purpose. It might help to solve the brick shortage, and at the same time provide the profession with another material for general use. He then produced examples of glazed bricks, with one face coloured red, yellow or blue, as used by Saarinen on the General Motors Building outside Detroit, and remarked on the "remarkable loveliness" given to the walls. Mr. Mills commented on slides showing the rapid deterioration of concrete in a 20-year-old building. Concrete was beginning to be looked upon with suspicion, he said. It was questionable whether reinforced concrete was a material which could afford to be left bare in Britain. The point arose whether architects must look to a technique of covering it in some way, perhaps as the Swedes did, or whether they had to think up an entirely new method of dealing with concrete facades. He then made a reference to fibrous plaster. He said that practically the whole of the last of the Wembley Exhibition buildings—now being demolished—was fibrous plaster, and it stood up remarkably well in the face of extreme neglect. What it would be capable of doing if it were considered as a material, and designed for permanent or semi-permanent use, could not be assumed, but it was a question well worth looking into. Of floorings, he said most architects were concerned with trying to find a hard-wearing, good-looking, reasonably cheap flooring for large areas, and for industrial buildings in particular. He concluded by asking: "Are we getting the sort of workmanship we deserve, or the sort of supervision we should demand on this building site? Do we ourselves know enough about the sort of job we want, enough about the sort of materials we are using, enough about the techniques we are trying to develop?"

H. V. LOBB spoke about the use of pulverised fuel ash for bricks by clients of his for about 20 years. The ash content in these blocks was 92 per cent., and the binding agent was principally cement, although a certain amount of clay and other mixtures was used as well. All were mixed in a rotary mill, and then the mixture went to a block-making machine where enormous pressure was exerted. The machine could produce 800 bricks an hour. They had been principally used in engineering structures in the power stations themselves. He did not altogether agree with the statement in the paper about their drying shrinkage. Those of which he spoke had pretty well the same drying shrinkage as the concrete block. It was desirable that they should be covered with tarpaulins and protected when they arrived on the site. Answering a question by William Allen, Mr. Lobb said he was speaking of steam-cured bricks.

WILLIAM ALLEN replied that he was speaking in the paper on fired bricks—like the clay product. He stressed the matter as one way of using up waste products. The present production of fuel ash could increase brick supplies by 1,000 million a year. As the country used 7,000 million a year, that was quite a good contribution. In 10 years' time the figure could be raised to 2,000 million. The sensible course seemed to be not to bring PFA to the clay works, but to manufacture the bricks at the power station, supplementary to the manufacture of electricity from coal.

MR. CECIL HOWITT, (of Nottingham), said two points struck him at the present time—they must build dry, and what was used must be handable. "If you get these handable materials which are readily brought dry, and fixed, you achieve what we have to aim at.

That is, factory-made building. The Americans do not build. They only assemble. We have to come to something like that." Of light frame building, he said when it was finished the acoustics had often gone all wrong. There was nothing finer for acoustics than the old-fashioned house, with its thick walls and fine carpets. With light building, architects were running into a problem which required care, for the places "rang" at times.

Concerning handability, EDWARD MILLS referred to the way in which Swedes delivered their bricks. The practice in many cases was for bricks to arrive in a metal-banded package, to fit the travelling platform of the hoist or the carrying hod. They arrived square and undamaged. All a bricklayer had to do was to snip the wire open and he had a neat stack near at hand.

The cost was so little, said MR. MILLS, that perhaps in England they could interest the manufacturers. He wanted packaged, perforated, pulverised ash bricks, all modular.

WILLIAM ALLEN said what made him cross was that it appeared the architects had to interest the brick industry in that sort of thing, instead of the position being reversed.

J. LEWIS WOMERSLEY (representing the City of Sheffield) said it was perhaps some solace to those who sometimes had failures to be told that in this country there was a climate which was as hard as anywhere in the world for buildings. It was right and proper that architects should enthuse about the architecture of Brazil, but if they had an accompanying thoroughness and enthusiasm for enquiry, they would also seek out a knowledge of the climatic conditions which gave rise to that particular method of architecture. Then they would, understanding British conditions, develop an architecture of the country's own. It had become clear to him that an alternative cladding material to brick had yet to be discovered. He would support the appeal for more enterprise in the provision of new coloured bricks and larger clay blocks. He felt that if architects knew more precisely what they wanted, and could assure brickmakers of having a market, the latter would be more prepared to go into production. New methods and plants cost money, and in these days of near-shortage and easy markets it was understandable that manufacturers should require assurances before starting out on a new line. There was need to continue research on the new lightweight cladding materials. Mr. Womersley said he believed that the average practising architect had so little time to go fully into experiments on new materials and techniques that he was depending very much on papers, such as those submitted to this conference, to give him the confidence to use new materials.

L. K. WATSON, of London, said about five years ago he had a factory built, and many processes were used, needing about eight different flooring materials. The material chosen for the main floor was made the subject of enquiries among colleagues and at the BRS, but soon after that part of the factory was taken over he was called in. He found that some paraffin had been spilled and it was eating one of the flooring materials away. Nobody had warned him about that defect in the material. He suggested it was just as important for architects to be told what a material would not do as what it would do. The BRS talked about materials under their scientific names. Architects ought to have some way of knowing what the BRS meant in the terms of trade names. If an architect asked a sales representative what his product contained, either he did not know or he said it was secret.

WILLIAM ALLEN cited the difficulties raised by the laws of libel, which hindered people who were trying to be objective and helpful. That hampered the BRS a bit, and he advised getting on the telephone rather than committing things to paper. On the question of what things would not do, as well as what they would do, he said it was just part of the general question facing the profession that the sales people, and very often the manufacturers, were just technically not good enough.

"If we insist that the sales people have the technical information we want, and tick them off if they don't, I think we will begin to get it," he said.

EDWARD MILLS commented that the standard of publicity material put out by many manufacturers in trying to sell their goods was deplorably low. American publicity contained much technical information.

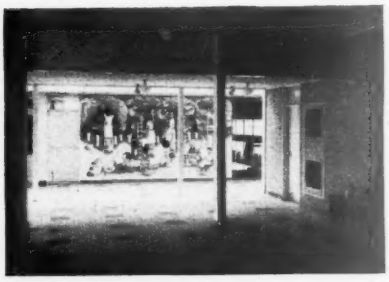
S. MORRISON, of Derby, said he thought the use of so many of the non-traditional materials was liable to give an international architecture, which was altogether the wrong thing. The world would be very badly off if every building looked exactly the same. It would be through the use of local, or locally produced, materials that the country would achieve an architecture which was national.

ERIC S. AMBROSE, of London, complained of manufacturers who did not give all the necessary information in their bulky catalogues. For many years he had been pining for a simpler method. He thought it might be achieved by makers sending to architects the information printed on postcards, which could then be filed on the desk, in a box, and be ready to hand for reference.

EDWARD MILLS, introducing the second day's discussion, said the first, and perhaps major, issue in the second half of the paper concerned claddings.

He said: "On the question of cladding we are faced with a revolution in building

Part of the large audience at the Conference's inaugural meeting.



"On the face of it, rubber may seem to be pricing itself somewhat out of its pre-war place in the market, but one cannot pass it by without commenting on the embossed form of tile which the MOE architects developed and introduced at Wokingham. This has slightly raised buttons to give a firm grip and a constant appearance of cleanliness. Some of us who saw early samples and noted them with only mild interest were startled by its genuine loveliness at Wokingham, for added to the merits claimed for it was an unexpectedly good sense of soft texture on the big scale. Embossing is not a technique applicable to lino, which is calendered in manufacture, but presumably the p.v.c. makers could use it, and we might earnestly commend it to their attention." (*Allen-Mills.*)

construction and technique, in that we are thinking in terms of lightweight skins to outbuildings, which necessitate a different approach to the outside wall of our structure. This is perhaps the biggest revolution in building technique, the fact that we are no longer relying on a heavy masonry exterior to take our loads."

As had been discovered in dealing with external cladding in that way, the solutions architects offered, and the problems they solved had produced a number of problems in their train. As cladding was made more impervious to rain water, so it was throwing a greater burden on the jointing of that material, and a problem arose in keeping the joint watertight.

WILLIAM ALLEN interpolated on the problem of mastics. It was a problem, still unsolved, which had to be overcome. He showed, and Edward Mills dropped, a 10-year old lump of plastic which was now as hard as stone.

EDWARD MILLS said one of the interesting things seen in relation to the cladding problem was the wide-scale use of glass, not only for the glazed areas through which a person wished to see, but for the infilling area which could be opaque or coloured. Here again the mastic question came into play. Glass obviously had a tremendous field. It was one of the materials which had increased less in price since the war than any other and it was one of the fields in which manufacturers were showing quite a lot of enthusiasm and energy in producing new ideas. In the United States there was a tremendously wide use of the anti-sun glass, although if it was over-used it gave buildings an aquarium-like look with its blue-green tinge, and it required strong colour to show off the building. At least one manufacturer in this country was thinking in terms of stove-enamelled glass. Other manufacturers were thinking in terms of the sandwich of two sheets of glass with a coloured membrane in between, and a rubber strip sealer keeping the two panes together. The glass field, he said, was one which was widening quite rapidly, and some interesting results should be seen.

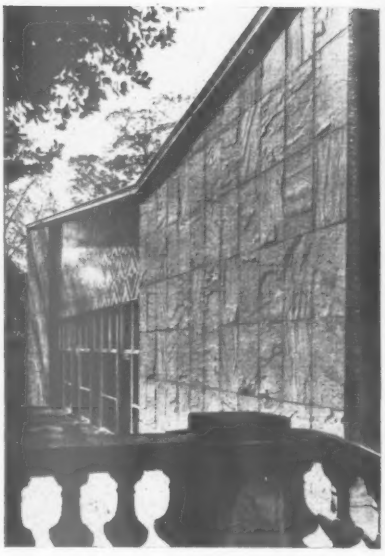
WILLIAM ALLEN: Altogether 18,000 things architects bought were covered by standards, and there was no dimensional co-ordination between them at the moment. There was, therefore, scope for activity in that field.

He said: "It occurs to me to wonder whether we are not putting too much of a premium these days on originality of design and too little on systematising ourselves in relation to building techniques. I do not think one can put the clock back, or try to stop the hands going round, but we should have some sort of objective in mind. Originality can be carried too far in this sense—it should not be regarded as disgraceful to repeat an idea and try to improve on it a second time. A design idea, if it is a good one, I do not think should be dropped just because the next thing should be something new. On the other hand, it is out of the originality of the times that we are to get the main solution to our problems. At the same time originality is costing us money. Innovation has not reduced building costs since the war. If anything, it has probably increased them. One should try to have eventually all the main bulk of our building programme being done by prefabrication and by a good, flexible, modern conventional grammar of building.

"You cannot get from the building industries all that we sometimes demand on a job. I think that is why our prices are sometimes high. I think it is quite clear that where the innovation is being done, it is being done by those parts of the industry which are well staffed technically and scientifically, and not by those which are sitting back and saying: 'This is the way we have always done it and it has worked pretty well.' The clay industry is suffering from that at the moment, and I think other industries are, too. I think the unique feature of British post-war building is prefabrication. In no other country do you see it so extensively used, or so high quality, and so competitive in the market. The development is fascinating.

"With it has gone the idea of development teams. I think they are part of our technique of getting a more sure and firm control over the building industry. If we are to control the building industry and give them the leadership they want as agents, then it is surely to be from development teams. That is simply an idea of joining forces with the other forces we have to use—engineering, costing, and so on.

"We have educational problems to face. Are we getting what we want from the building industry? Have we really got the



"We must remember once again that the impermeable unit demands the perfect joint, and the latter is harder to obtain than the former. There is much to be said then for the rather absorbent stone face; it reduces the free water left to attack the joints, and makes the joints themselves safer by absorption along them." (*Allen-Mills.*) *Above, stone slab facing on a school, at Stevenage, by Yorke, Rosenberg and Mardall.* (*Photograph: copyright* "The Architect and Building News.")

"The United Nations Building was the test ground for modern American curtain walling, and its designers took a courageous, tremendous stride in design, which has unfortunately suffered some difficulties which we must all hope are now overcome. The building stands, of course, much exposed to high winds and driving rains, and the skin being entirely of glass and unabsorbent, the conditions are specially severe—though no more severe than any building here should have to stand. The factor which seems to have been unexpected is that some of the air forced against the building travels or is sucked upward, carrying with it water which enters into various weep holes, drips, etc., designed for drainage on the normal assumption of downward flow. It has been necessary to carry out extensive remedial measures to seal vulnerable points and joints, which it is now hoped have cured the troubles. It remains the case, however, that in these high, exposed structures we must apparently face the need for virtually completely weather-tight construction if we are going to use non-absorbent curtain walls. It is the difference in absorption between this and conventional materials which creates the special difficulties. In this connection one is then bound to ask whether our mastics and putties are going to meet the demands made upon them. Apart from the tendency of the material to harden, there is the particular problem that it is supposed to adhere to things in constant relative movement." (*Allen-Mills.*)

right balance of training among architects? Have we the right capacity to criticise ourselves when we have such a limited range of post-graduate facilities?

"What is the best technique to tell the building industry what we want? Probably more can be done by us as a body and as individuals. We suggest in the paper symposia to be held at the Institute, and we suggest that is perhaps a good job for the Science Committee to take on."

C. S. MARDALL, of London, said there had been several references to the low standard of technology in the building materials industry. He felt in a way that the quality of building in this country was really lower than the quality in most other countries. "You can, to a certain extent, control the quality, because you get the quality you are prepared to accept. Even with the best labour in the world you cannot achieve good quality if the materials are badly produced and are not true in shape. This brings us back to the question of technology. I wonder if it would be possible for an organization like the Building Centre, with an advisory panel of architects and with the help of the BRS, to award some sort of certificate of merit to firms launching or selling a material which is not only a good material, but is put over in such a way that the technical information is available as to its use. The point is this—I think the publicity value of such an architects' certificate of merit would be so great that any threat of withholding it, or withdrawing it after award, would compel them to be on their toes."

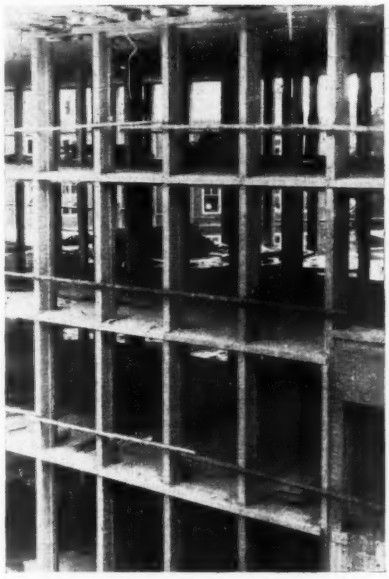
WILLIAM ALLEN: "I think there is nothing we can say except to take note of this suggestion. I am not sure I have not heard something of the sort before."

J. O'HANLON HUGHES, of Dublin: "Hillaire Belloc, in 'Architecture and Civilization,' foresaw the vast extension of physical science and its depressing effect upon architecture, producing and bringing about this great emphasis on horizontality which we all associated with the Greeks." He was frankly surprised to find missing, in the section of the paper on materials, the heading "Metals." The advance in metallurgy was the thing which was keeping us continually on the move by land, sea and air. He warned against overlooking steel. The men who were developing the aeroplane and motor car were the men who were pushing architects ahead, forcing them to think not of construction, but of assembly. We as architects still had a cave-man mentality.

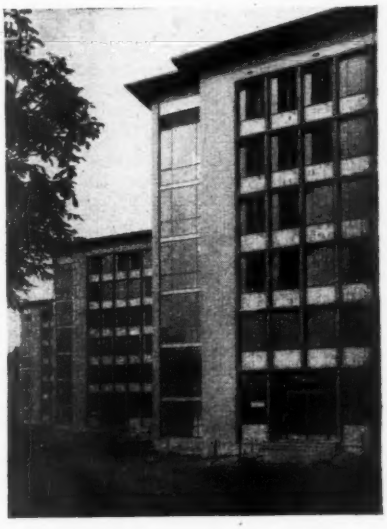
HOWARD KELLY, of London: "Most of the buildings we have seen illustrated or heard described have been erected for clients who are not spending their own money. Many architects are working for people who have to spend their own money, and who believe they should not pay for the architect's experimental errors."

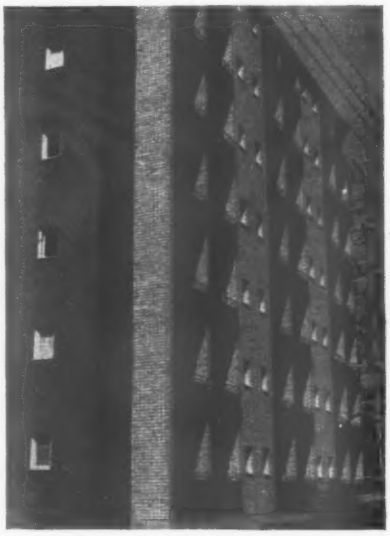
EDWARD MILLS: "I have a job at the moment where the client is getting more and more enthusiastic as we go further, partly because there are great improvements to be made. If you are thinking in terms of an industrial building, where processes change so rapidly, one must have a building one can adapt without tearing the whole thing down. Contemporary technique and material can produce tremendous rewards. It can cost money, but it can produce compensations which are truly worth while."

GEORGE LEE GREAVES, of Hanley: "Housing problems present the field where there is scope for the greatest amount of improvement. We are at the stage where we are moving from local authority housing to private housing, where it is to be more difficult. We have been using brick very wastefully by taking our loads on the inside skin and outside skin for decoration only. I say we should use brick as an outside skin, and also to take the load. We are coming up against conservatism of finance, mainly from the people who provide the money, the building societies. People who are paying say we are not to do this, or that, because it has not been up for 50 years, and they do not know if it will last until the end of the lending period."

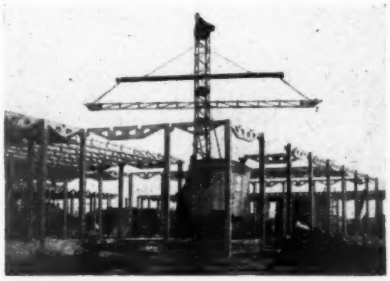


"A more promising line is found in a recent German building in Cologne, for one of the Ministries. In this case exposed uprights between windows are high-quality precast concrete units of storey height, designed to take vertical loads but not connected to the floors in any way capable of transmitting moments. Instead, the floors are cast in situ *and the moments resulting from wind forces are taken by the large panel walls formed at the ends of the blocks and at other strategically chosen points in the plan. Spandrel panels fill in the spaces below the windows. The whole conception is simple, and well suited for quick erection. It provides very satisfactory office accommodation and gives clean, rather elegant interiors and exteriors. Owing to the high quality of the precasting, they get away with no plastering in many places, and only need a skim coat in others. It is well worth consideration for wide use." (Allen-Mills.)*





"In Basle 13-storey blocks have been erected with 38-cm. wall thicknesses. And, in a way even this is outstripped again in Germany and in Sweden where 9-in. walls of light-weight blocks carry nine-storey buildings. The fact is that continental brick and block makers seem often to have more modern plant and laboratories and modern ideas, and to be more alive to the need to push forward and explore the extended use of their products; can we honestly say we can see the counterpart here?" (Allen-Mills.) Above, 9-in. cross-wall construction in Sweden.



"The prestressed concrete system newly developed as part of the MOE development programme begins to look as though it may grow into a fine and lusty member of our community of building types. It is a fully prefabricated system, comprising prestressed stanchions of remarkably small section (e.g. 4 *in. by* 6 *in.) considering they run through four storeys, and these carry a flooring system of constant-depth precast units, post-stressed into beams capable of classroom spans, decked in concrete slabs, and with precast sound-absorbent plaster ceiling panels. The outer walls are clad in precast concrete slabs with a crushed stone finish, and hardwood windows are used. Apparently the economics of this system are working out very well and are proving attractive to buyers. Like so many of the other prefabrication systems originating in the British schools world, this can be used for many purposes apart from educational buildings because of its quality, quickness, price and adaptability." (Allen-Mills.)*

H. V. LOBB, of London: "I want to put forward a suggestion that all we architects here are really part of a development team, and ask for your help. Twelve months ago I gave a lecture at the headquarters of the Royal Institute and, having commented on successes and failures of systems of construction used on the South Bank Exhibition, I reviewed other problems, and touched on double glazing and the extravagant use of fuel in this country, and the exhaustion of what is a wasting asset. I said I had been told that on a recent job the cost of double glazing had been largely paid for by the saving in the heating installation and one year's saving in fuel consumption. Here was truly an opportunity for the glass manufacturers, the metal window manufacturers, and the insulation people, the fuel research people, the architects and engineers to get together and give some authoritative information on this point, based on field research. This penny dropped and Pilkington Brothers have taken up the challenge and have appointed such a committee to go into the whole problem.

"I want to ask every architect who has had any experience of double glazing to let Mr. Allen, or myself, or Pilkington's know about it and offer facilities for research people to take records of the fuel consumptions, inside and outside thermographs, and so forth, and establish accurately the savings which are effected. According to preliminary research, the savings by double glazing are likely to be greater than they appear to be, and greater than small experiments indicate. If that is so and we are able to establish the position more accurately, the cost of the provision of the double glazed units themselves will come down, as well as the cost of systems."

WILLIAM ALLEN: "It is the development technique which is required if we are to get reliable answers to the problems which face us. I think Mr. Lobb is lucky to have had his challenge taken up so sensibly."

J. BLACKBURN, representing the Royal Burgh of Inverness, said they did not seem to be having the trials and tribulations suffered in England. They did not have rendering falling off the walls, or plaster cracking in some of the houses. There was such a thing as Scots lime harl which stuck on the wall and never cracked.

"We are heating houses with under-floor electric heating," he went on to say. "Of course we have the Hydro-Electric Board, who are trying to sell electricity instead of stopping us from using it."

WILLIAM ALLEN: "Can we really afford electric heating in place of coal fires. I have never heard of electricity for heating that has come out at less than twice the cost of any other way. Mr. Blackburn has sent me a note on further experience of central floor heating and it says £1 a week for heating, cooking, hot water and lighting. A great deal depends upon the cycle of accommodation. Electric floor heating in some schools in the Northern part of this country proved to be extremely high. That does not necessarily apply to housing. We would be delighted to have details of Mr. Blackburn's system. It is one of the successes we want to hear about."

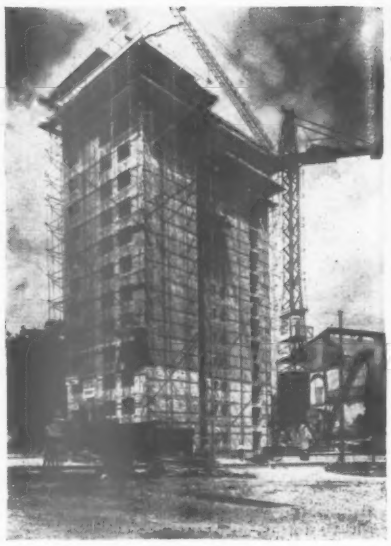
R. C. BEVAN (BRS): "It would be helpful to us to hear of the successes rather than the failures. The more wide the information we obtain, the more certain we can be of our facts."

F. B. POOLEY, representing the Buckinghamshire County Council: "Curtain walling really costs a little more than the ordinary traditional outside skins on buildings. It seems to me we should save money, and afford curtain walling, if we can make more use of brickwork. It seems to me that the size of bricks and brickwork can be much reduced and I should like—if we could have module—instead of having a 4½-inch brick, to get a 3-inch brick."

K. R. EMMETT, representing the County Borough of Smethwick: "In the case of no-fines, in my office we are at the moment building 11-storey flats and there is no doubt that in comparison of costs between structural steelwork, reinforced concrete construction, and load-bearing or reinforced brickwork, and no-fines construction, that no-fines is very much cheaper. We are hoping to let in two years' time three-bedroom, 11-storey flats for a gross rent in the region of 30s. a week, which is equivalent to that of two-storey housing, and in parts of the country that is practically impossible because we have no land. We have come to the conclusion that at the moment it is the cheapest form of construction."

C. S. WHITE, of London: "The aim is to make byelaws less restrictive, to try and make them more flexible, to frame the byelaws to call for performance standards, and then to give certain permissive methods of achieving that standard. How it is to be interpreted remains to be seen, but the interpretation by local authorities all over the country is bound to vary to a certain extent. It has always puzzled me why colleagues regard the more scientific aspects of building with a sort of tolerant detachment. It seems insupportable because anyone who takes his job like that is a menace and it will ultimately come home to roost in the form of serious troubles."

A. POTT (MOE) said, regarding the distortion of pre-stressed members: "We have had some slight difficulty about that, but it has not been at all serious. We have got to look on small pre-stressed members as much more comparable to steel in behaviour than normal reinforced concrete. Regarding vermiculite, I hope nobody who has not used this stuff thinks it does not get cracks, because I have had them. I



"At Coventry and Birmingham they have used the technique (of 'no-fines') up to four or six storeys, the no-fines walls in the latter being supplemented by dense r.c. framing formed in situ. It is an interesting development, but . . . has been much outdone in Germany where heights as great as 19 storeys have been built. The design there is well engineered, the concretes being graded to increase in strength towards the bottom storeys, and the plan being well organized so that plan elements introduce stiffening in particular ways and places to provide the necessary stability. The Germans have made extensive use of no-fines concrete to absorb their war-time rubble." (Allen Mills.) Top photograph, 4-storey flats at Coventry, by D. E. E. Gibson, City Architect. (Photograph: copyright Wimpey News). *Right, 19-storey students hostel, Stuttgart, with top 14 storeys of no-fines, 2 storeys dense unreinforced concrete and bottom 3 storeys a "box" of reinforced concrete. Outer walls: 15-in. Partition walls: load bearing. (Photograph: copyright Christian Bossert.)*

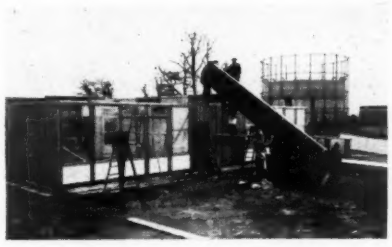
"As a means of getting walls and floors in place, climbing shuttering for in situ *work holds out basically much more prospect of success, and a trend in this direction seems bound to occur. Its essential advantage is that the three operations of striking, cleaning and re-erecting which are necessary at every lift, with conventional shuttering, are entirely cut out. These often make form-work more expensive than the item being formed inside it. The main limitation of climbing shuttering is that the building must be identical in respect of main elements on each floor. Buildings are being erected with this system in Hamburg. The shuttering is designed to climb up rods left in the centre of the concrete elements, and wall shutters are joined by decking which provides a working platform over the whole area and eventually is itself the formwork for the roof. The intermediate floors are formed subsequently on telescopic shuttering, held in holes left in the walls. The shutters climb on automatic hydraulic jacks working uniformly at a 4-in. rise per hour, and a little arithmetic will indicate that this represents a storey per 24-hr. day.*

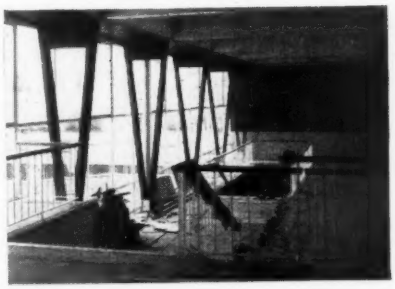
"Curiously enough, shuttering of this general type was in use here 20 years ago or more for silos." (Allen-Mills.) Above, 14-storey apartment building in Hamburg, of which the shell was built in 14 days.

". . . the only really outstanding timber development is for systems designed in the first instance for schools, and now being used, like other school systems, for other purposes. One of the interesting things about these is that they have been developed thus far mainly in terms of imported, rather expensive hard-woods, and even so they proved sharply competitive in costs. Now that the cheaper softwood is freely available again they are obviously in an even stronger position, cost-wise. One of the first off the mark was the Derwent system, mainly of pre-formed panels, fixed between the simplest of uprights, carrying a stressed plywood beam system for the roof. The thing that stamps this job with a special quality, apart from its simplicity, is the use of a very elegant mahogany cladding in vertical strips. Originally designed as a single-storey system, it has been worked up now to a second floor. . . ."

". . . Alongside this in a sense stands Hertfordshire's own system, using rather handsome, heavy timber V's as major stanchions, anti-phased in the modular grid, again carrying a stressed plywood major beam system with minor beams to supplement it. The external cladding is of vertical strip boarding and the whole looks very well. In fact the big V's give a special sense of architectural quality which is rather outside our experience in our prefabricated schools, at least so far as external appearance is concerned. . . ."

". . . The Punt system is a timber arrangement in which the panels meet on the grid lines, and carry all the roof loads, the roof being of long box beams, or 'punts' with stressed plywood sides. The assembly is commenced by accurately setting out a steel foundation jig, which then forms a permanent shutter for concrete and guides the setting out of all main plan components. The walls and partitions are assembled





complete with doors and windows, and a building of charm and quality is put together astonishingly quickly. The difficulties of fire-proofing timber discourage its use for more than one or two storeys, but within this limitation it is crystal clear that prefabricated wood structures can carve a distinct niche for themselves in modern building in this country. It shows up the advantageous cost characteristics of timber used this way that the combination should be so competitive with other prefabrication here in Britain, where all the timber has to be imported." (Allen-Mills.) Top left, Derwent system, as used at a school at Belswain, Hemel Hempstead. Architect: C. H. Aslin (Consulting Architect for Derwent system, S. Morrison). Above, school at Watford, with frame and cladding by Elliotts of Reading. Architect: C. H. Aslin. Left, Ove Arup's Punt system, as used for a school at Garston. Architect: C. H. Aslin.

think it is something we are to get more and more of in this country.

"It seems a little disappointing there was not more emphasis on lightweight concretes. I believe these are materials of enormous potentialities, and we are slow in adopting them. We have had troubles, but these are teething troubles, and I think there is an enormous future, and I hope they will be developed.

"The problem I am to leave with the authors is that of mastics. You cannot specify a mastic, but you can only go to one of the few firms in the country who are good, and put yourselves in their hands. None of us like relying on mastics. It is unsatisfactory. What are the properties one wants in a mastic, and what materials are suitable for achieving these properties? I think we might tell the authors that the next time they speak to us we shall want to know more about mastics, and hints of the solution, rather than just rubbing in the awful difficulties we can get by using them."

"But there is one item we must bring in, the continental tower crane, unknown here until recently but now in rapidly widening use. A variety of types has been developed for all sorts of buildings, ranging from small ones for houses, through tall, long-reaching ones for quite big buildings, and self-climbing types for the tallest structures, not used here yet. Both in the industry and the profession we have to learn how to use these to get the best value from them. The industry, for its part, must eventually not only be expected to have the right types, but to know how to organize its

labour in relation to them. On our side we have to think of at least three things—our plans in relation to crane movements and range: the sequence of operations so that cranes can be fully utilised to lift everything liftable; and the striking of a good balance between the capacity of cranes and the weight of things to be lifted." (Allen-Mills.) Left: tower crane in use for house building at Norwich. Above: climbing tower crane on a multi-storey apartment house on the Kotelnicheskaya Embankment, Moscow.

C. H. ASLIN, vice-president of the RIBA, proposing a vote of thanks to the authors, referred to their paper as the most successful that had ever been given before a RIBA Conference. In addition to the quality of the paper, with the stimulation it had given everybody, they had had an exhibition of the technique of delivering a paper. Perhaps most members on reading the paper would have felt it could not possibly have kept people animated for about five hours, and a great debt of gratitude was owed to Messrs. Allen and Mills for the brilliant way in which they had projected it. He said: "I must state my personal indebtedness to the BRS. They know of some of our successes, and they have been combined ones, because we have taken the opportunity of availing ourselves of their help before going on with the work. The BRS has the capacity and the willingness to give architects generally a lot more help."

Seconding, RICHARD SHEPPARD said he did not think architects were sufficiently well educated as a profession to cope with present-day techniques. He believed if the teaching of building science could be improved, it would do a lot for the architects of the future.

He said: "Not sufficient stress has been laid on the very poor quality of present-day site management and procedure in building. I think until you get builders more highly trained and more efficient we will go puddling along in the way we have been doing."

FACTORIES

1. at ST. HELEN'S, LANCASHIRE

designed by CECIL C. HANDISYDE, assistant architect, W. H. DRAKE

consultants, structural, CLARKE, NICHOLS and MARCEL, heating, J. D. BLAKELEY

quantity surveyors, CAMERON and MIDDLETON

2. at HARLOW NEW TOWN, ESSEX

designed by FREDERICK GIBBERD, architect-planner, Harlow Development Corporation,

VICTOR HAMNETT, executive architect, G. T. GOALEN, senior architect (industrial),

D. GOODY, architect-in-charge, HORACE W. LANGDON and EVERY, quantity surveyors

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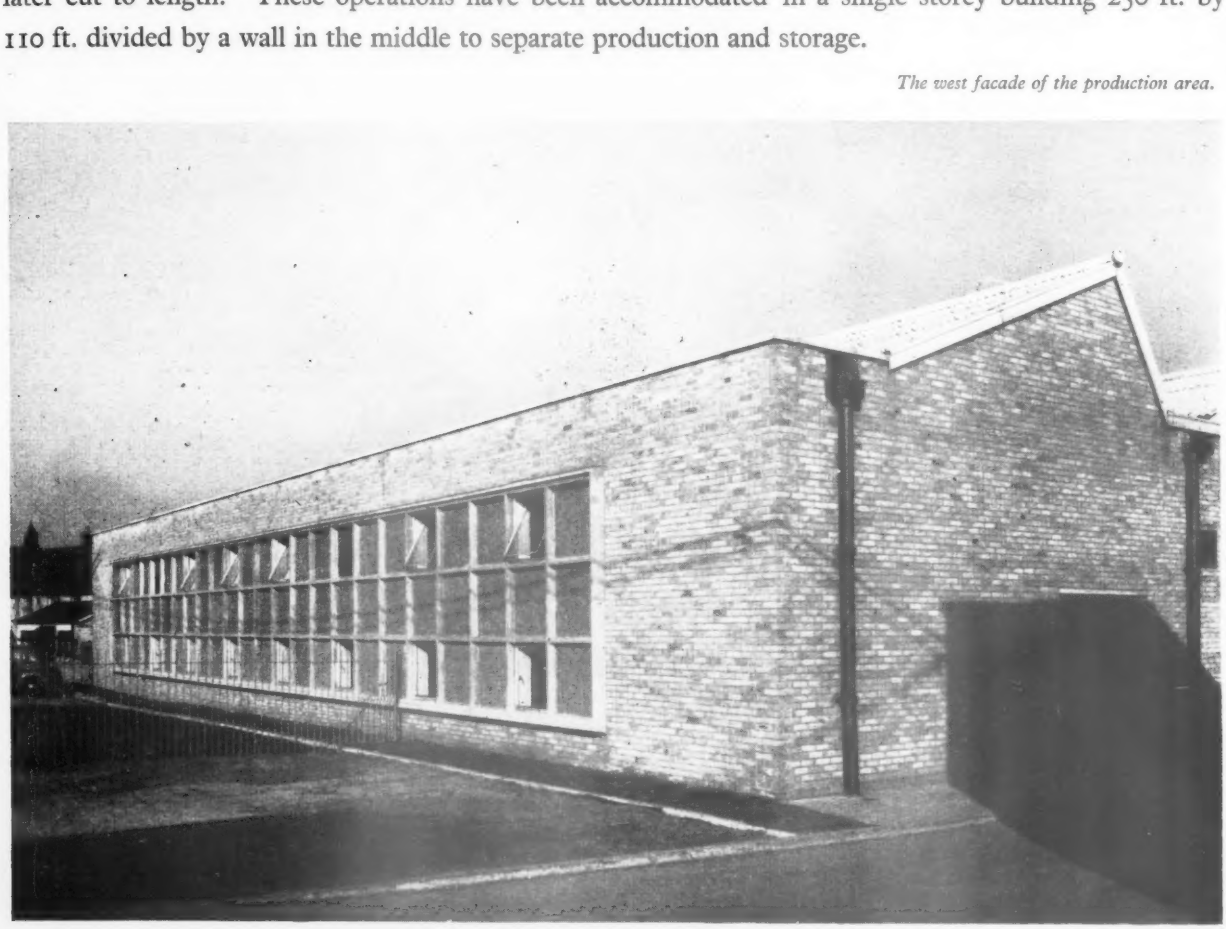
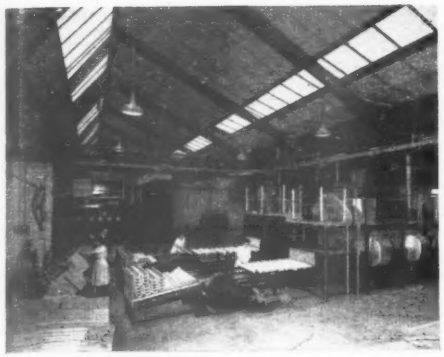
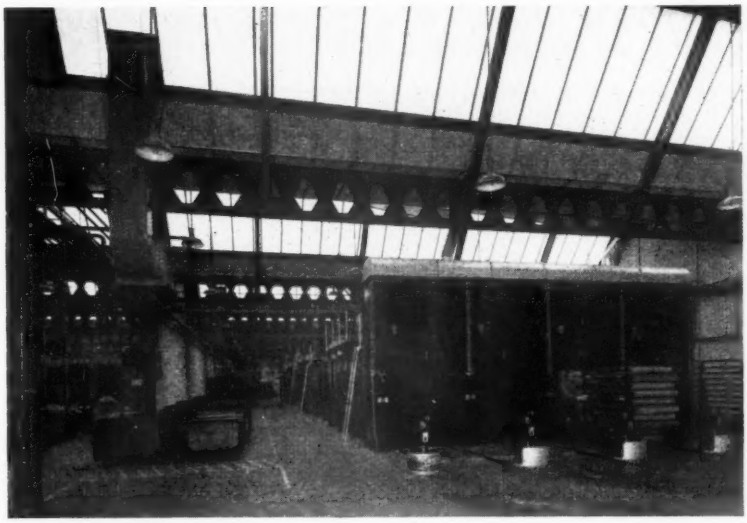
A new building was required by Fibreglass Ltd. to house machinery for increased production of " Rigid Sections," which are better known as sectional pipe lagging, and to store the finished product while awaiting despatch. The sections are made by rolling glass wool round a mandrel of the necessary diameter using starch as an adhesive. After wetting, they are passed through a long drying oven and later cut to length. These operations have been accommodated in a single storey building 250 ft. by 110 ft. divided by a wall in the middle to separate production and storage.

The west facade of the production area.





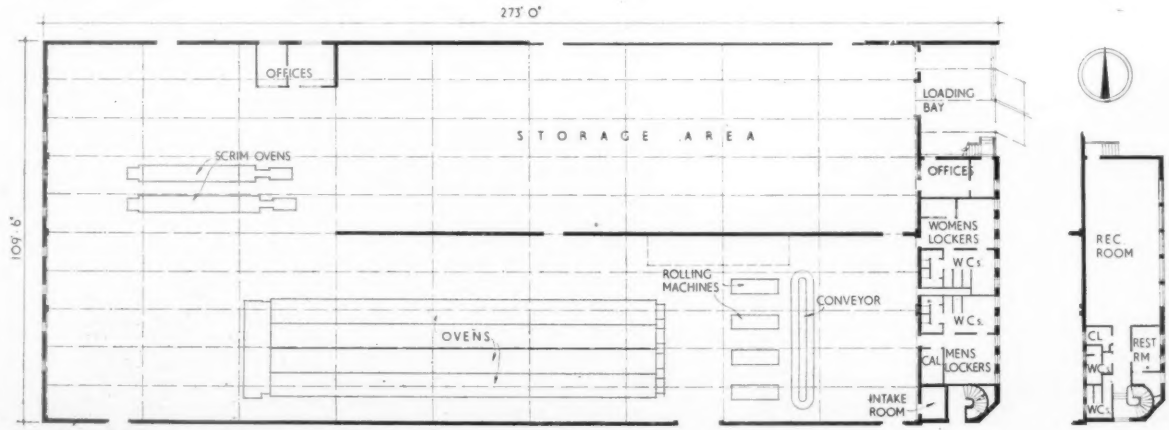


Top left, view across the production area showing welded roof frame and double lighting. Top right, production area from the west, showing castellated beams. Above, recreation room in the two-storey block.

GENERAL.—The site of the extension had been used for a period of years as a tip for ashes and industrial waste. Trial boreholes showed sandstone and hard grey shale at a depth of 15 ft., but in certain places where a fissure in the rock had occurred, the foundations had to go down to 48 ft. For this reason pile foundations were used, and to avoid vibration and noise in the nearby office building, cast in situ bored piles were chosen. The main walls are of brickwork supported on ground beams connecting the pile caps, and the ground floor slab of the two-storey block is also carried on ground beams. The floor slab of the production area is designed to carry a superimposed load of 25 cwt. per ft. super and is reinforced top and bottom. The roof is carried on welded frames supported by the castellated beams at 11 ft. centres. It was desired to have an interior without tie beams, to give clear space for operating the vertical sliding doors of the ovens. Main valley beams are at 27 ft. 9 in. centres, consisting of R.S.J.'s 22 in. by 7 in. cut and welded to form castellated beams 33 in. deep. To obtain adequate and uniformly distributed daylight, the roof frames are of " north-light " type although they face east and west. There is deep glazing on the west roof slope and a narrow strip of glazing facing east. The unglazed part of the roof is of corrugated asbestos insulated underneath with 1-in. bitumen bonded glass fibre supported on proprietary asbestos boards on aluminium tees. The principal feature of the west elevation is a grid formed by precast stone trays having panel fillings faced with slate chippings. Windows or ventilating grilles are fitted into the same surround. The cost of the piling was £2,700 and of the main contract £63,500 The general contractors were J. Jones (Woolton) Ltd. Sub-contractors, page 752.

FACTORY

1. at ST. HELENS, LANCS, designed by C. C. HANDISYDE



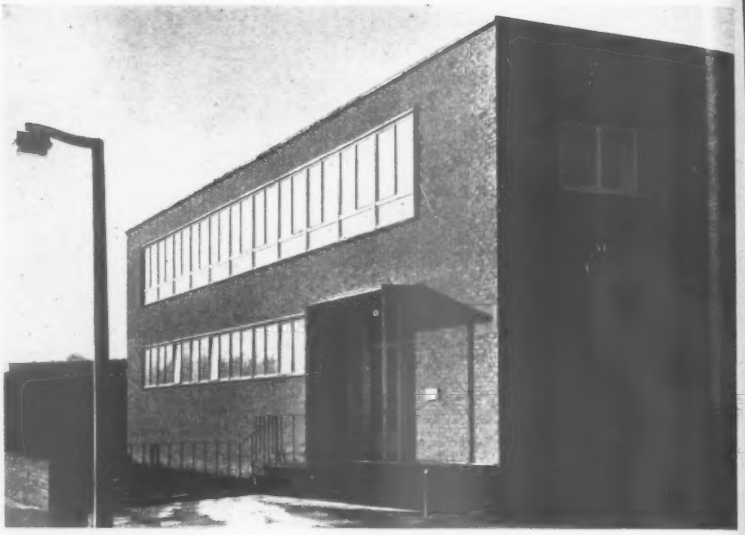
Ground and first floor plans [Scale : $\frac{1}{16}$" = 1' 0"]

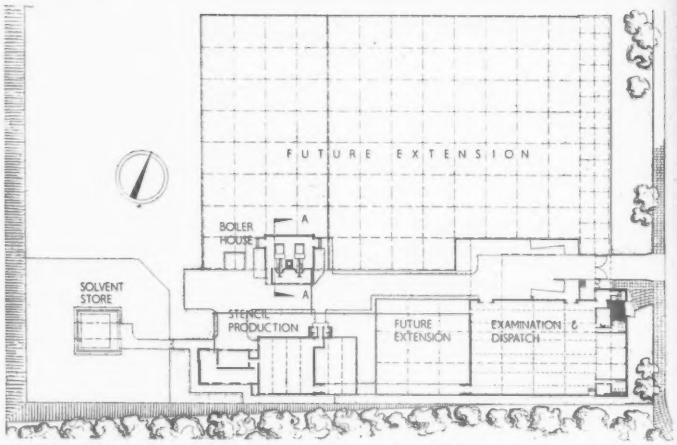
FACTORY

2. at HARLOW NEW TOWN, ESSEX
designed by FREDERICK GIBBERD

GENERAL.—This factory for the Kores Manufacturing Co. Ltd. on the East Industrial Estate at Harlow provides a two-storey administration block facing the main estate road to the east. Behind it is a standard factory building for the examination and dispatch of typewriting stencils, a special factory to the west for the manufacture of stencils and a boilerhouse to serve the existing buildings and the future extension to the north. Stencil production cannot be housed in a standard type of factory building and, due to cellulose regulations, which relate mainly to fire precautions, has to be accommodated in an isolated block. The production of ink

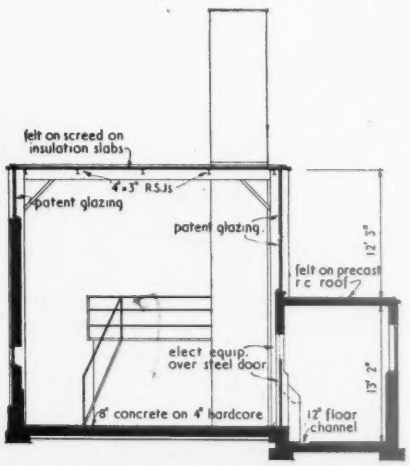
ribbons and carbon papers can be housed in a standard type of building, and space has been left to the north for the future erection of this type of structure, which will be connected by a bridge to the existing factory. All the buildings are steel-framed, with walls to the office block, stencil production and boiler house of 9-in. or 11-in. brickwork, faced with London stocks, and 3-in. corrugated asbestos-cement sheeting to the standard factory. Roofs are mainly of woodwool slabs covered with bituminous felt. The office block roof is of precast concrete beams. Internal walls in offices, lavatories, etc., are plastered with emulsion paint finish. Ceilings are of woodwool slabs, distempered. Offices and lavatories have pitchmastic floors and the standard factory has a floor of granolithic paving. Office stairs are in terrazzo. General contractors, George Wimpey & Co., Ltd. Sub-contractors, page 752.



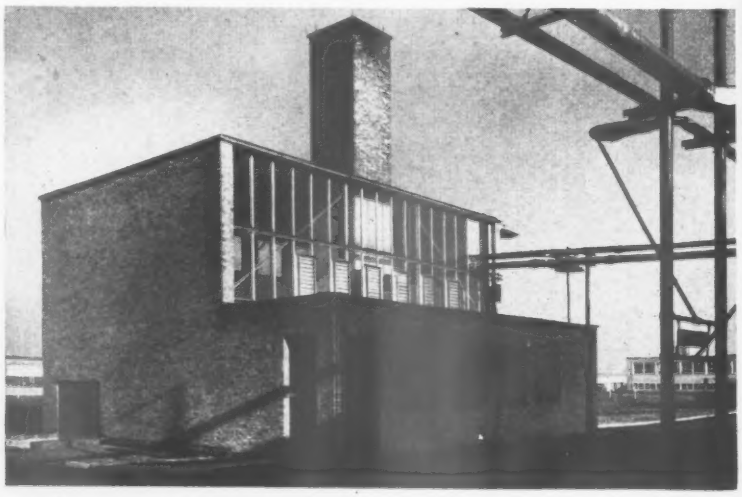


Ground floor plan and layout [Scale : 1/16" = 1' 0"]

Top, the east facade of the office block at the south-east corner of the site. Centre, birds-eye view of the boilerhouse from the south. Bottom, the boilerhouse from the south.



Section A-A, through boilerhouse [Scale : 1/4" = 1' 0"]



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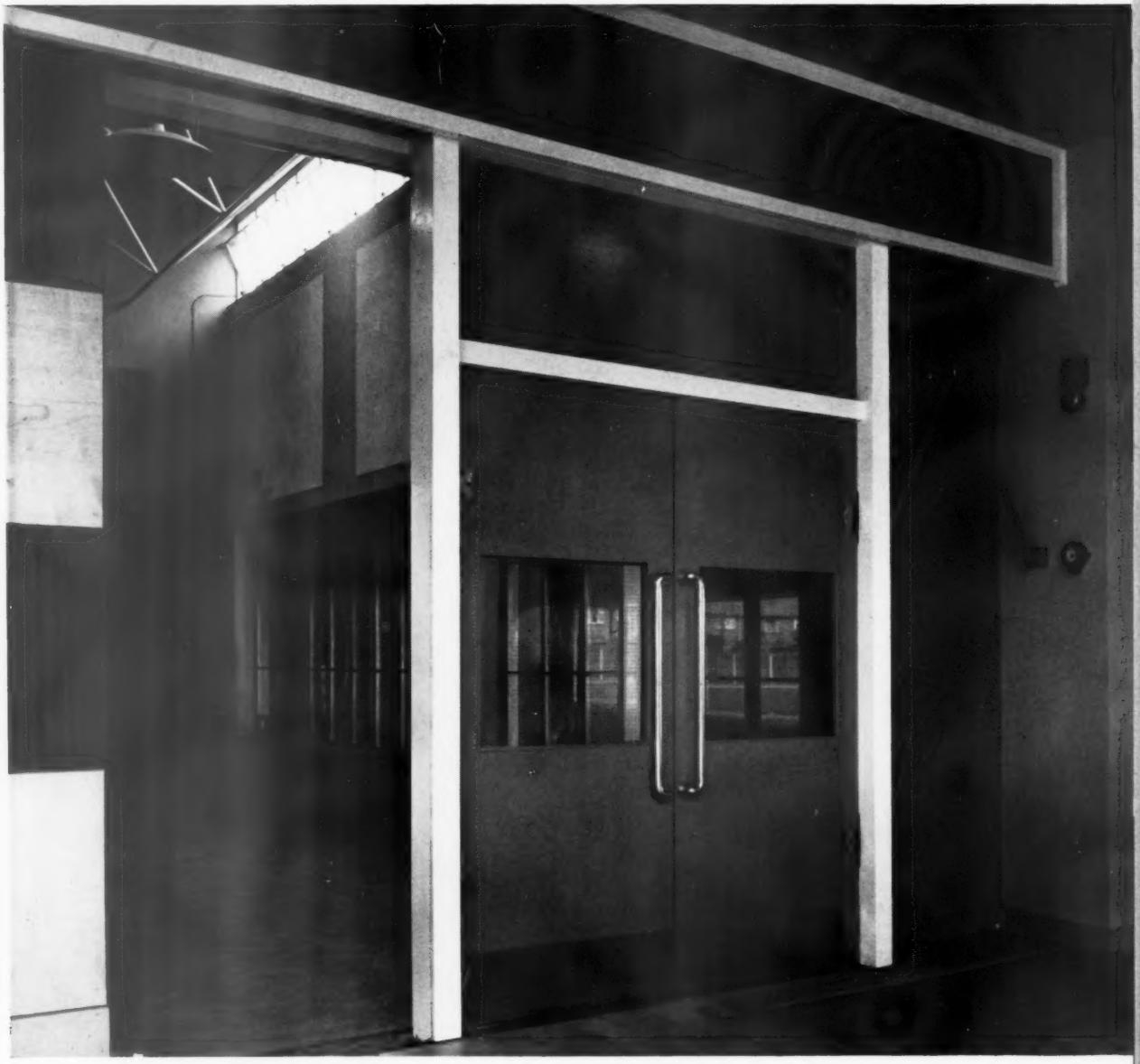
WORKING DETAIL

DOORS: 20

DOORS TO ASSEMBLY HALL: SCHOOL AT CRANFORD

Denis Clarke Hall, architect, in association with C. G. Stillman, Architect to the Middlesex County Council

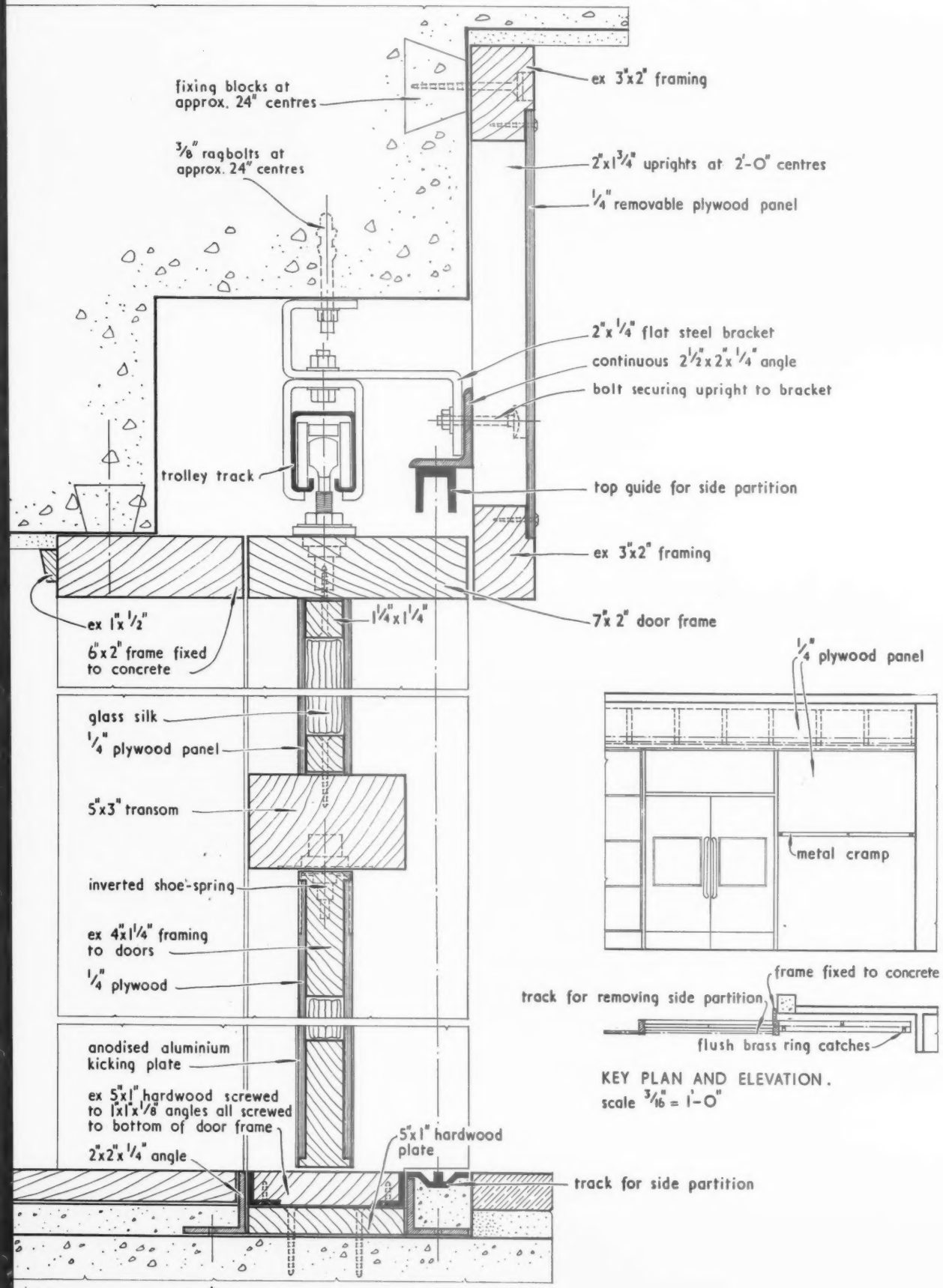


The double swing doors are incorporated in a sliding panel which forms part of the wall separating the Assembly Hall from the main circulation area. Since the swing door gear requires that the bottom track be sunk to a lower depth than usual a wood filler has been supplied (shown on the right of the photograph) which can be lifted into the groove in the floor when the door is pushed aside.

WORKING DETAIL **DOORS: 20**

DOORS TO ASSEMBLY HALL: SCHOOL AT CRANFORD

Denis Clarke Hall, architect, in association with C. G. Stillman, Architect to the Middlesex County Council



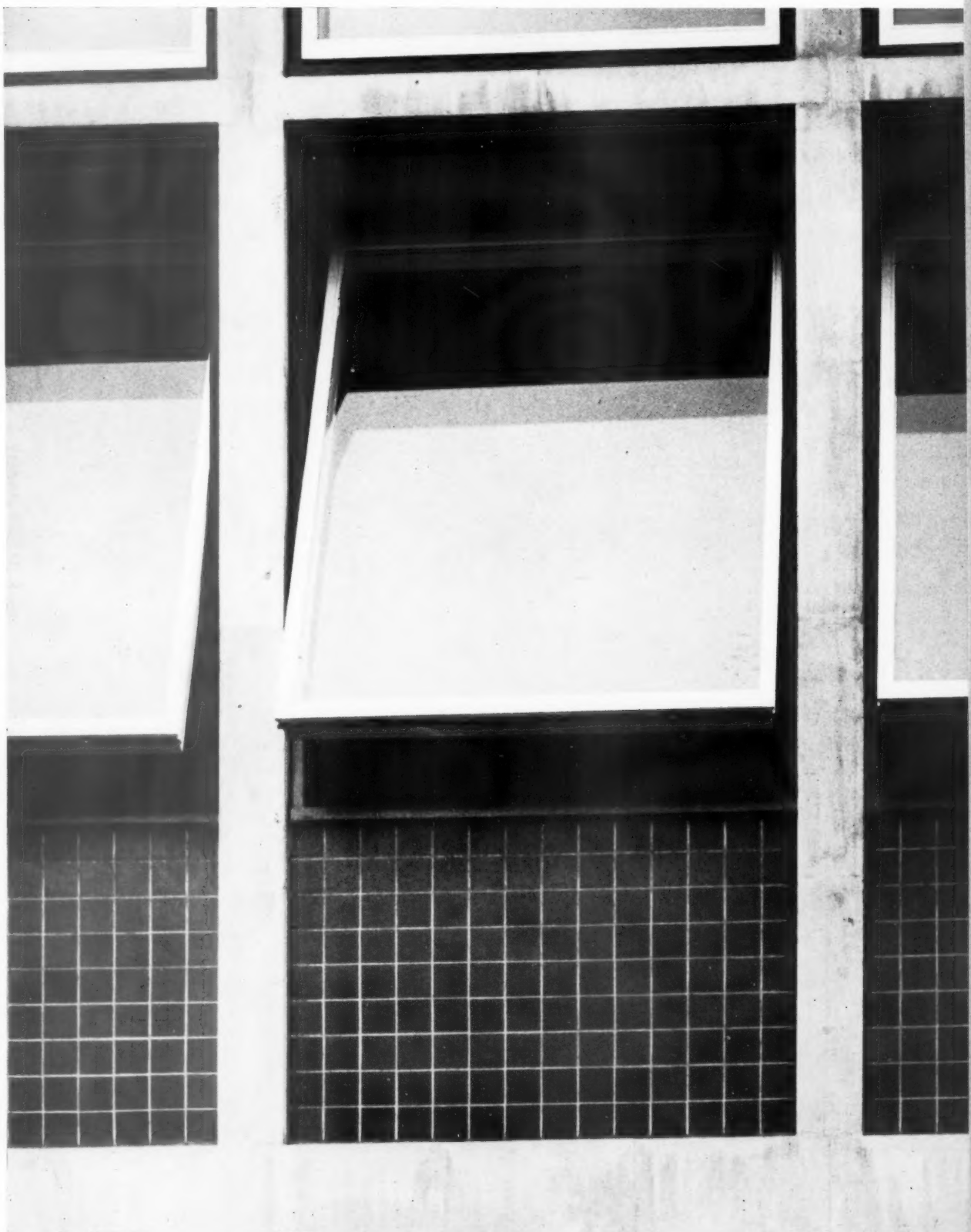
KEY PLAN AND ELEVATION.
scale 3/16" = 1'-0"

SECTION. scale 1/4 full size

WORKING DETAIL **WALLS AND PARTITIONS: 14**

PANEL WALL, OFFICES IN LONDON, S.E.1

John Lacey, in association with C. F. Timothy, architects; F. J. Samuely, consulting engineer



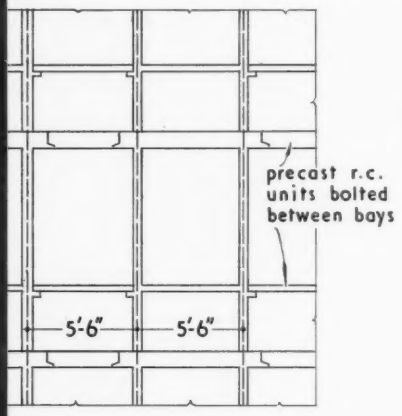
The weight-bearing frame and panel wall is built up of light precast concrete units. The main units which comprise the complete frame of one single-storey bay alternate with smaller beam units which complete the frame in the adjoining bays. The windows are horizontally centre hung so that they can be cleaned from inside the building. All junctions between the stone facing, the wood frame and tiles are pointed with mastic.

Architects' Journal 17.6.54

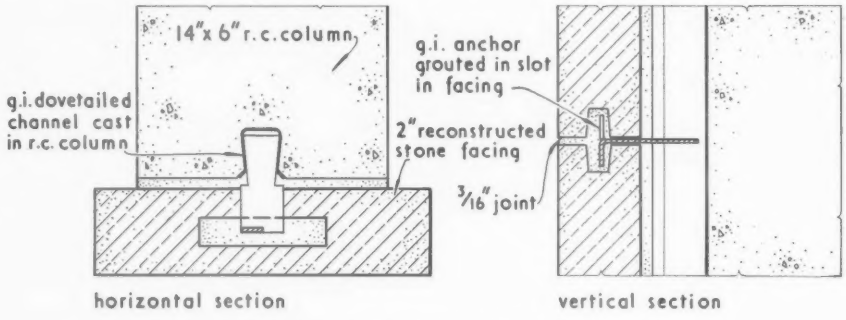
WORKING DETAIL

PANEL WALL, OFFICES IN LONDON, S.E.1

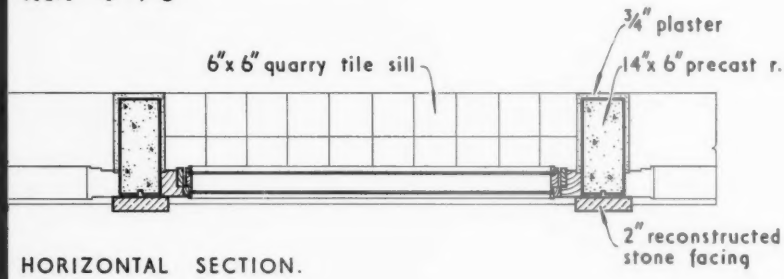
John Lacey, in association with C. F. Timothy, architects; F. J. Samuely, consulting engineer



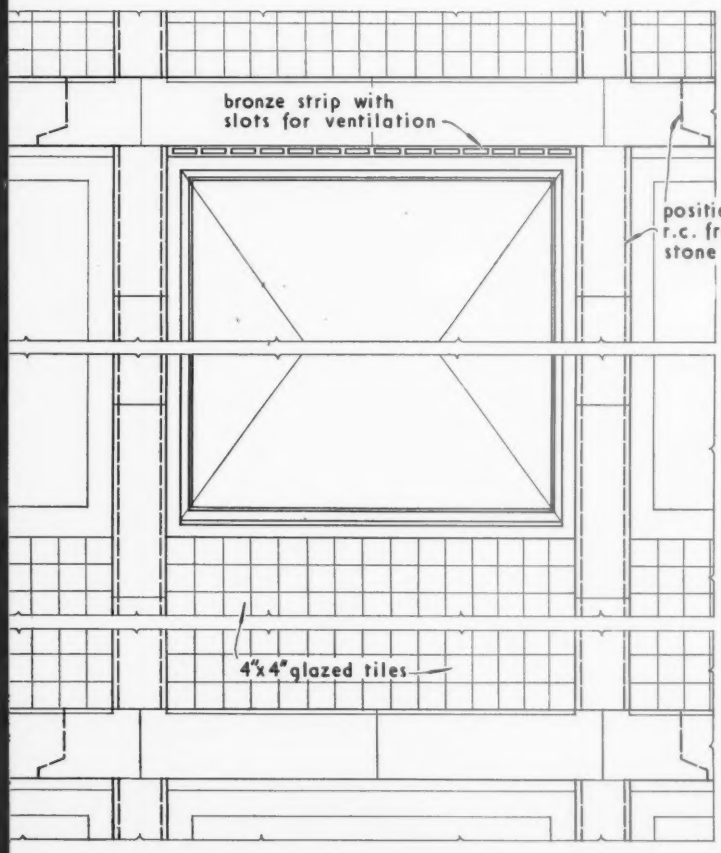
KEY ELEVATION OF FRAMING.
scale 1/8" = 1'-0"

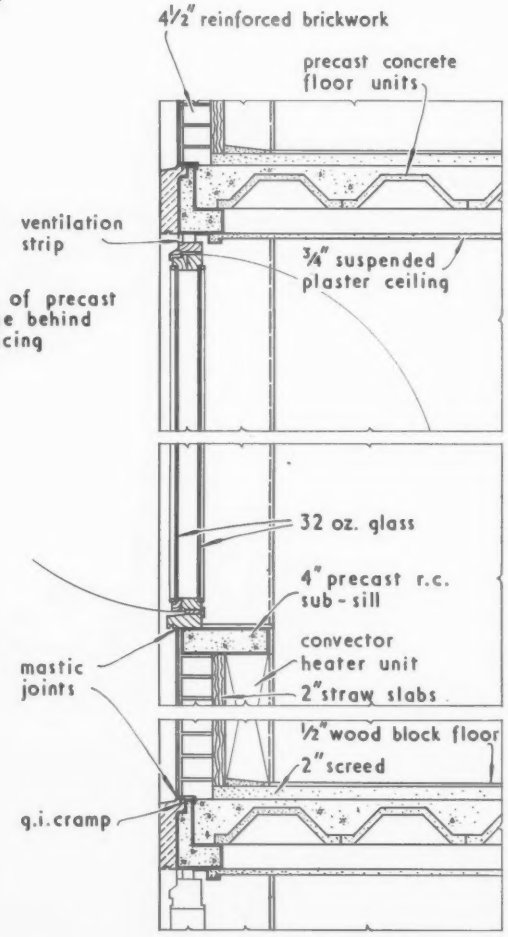


DETAILS OF FIXING OF STONE FACING.
scale 1/4 full size



HORIZONTAL SECTION.





ELEVATION OF TYPICAL BAY ... 1/4" = 1'-0"

VERTICAL SECTION

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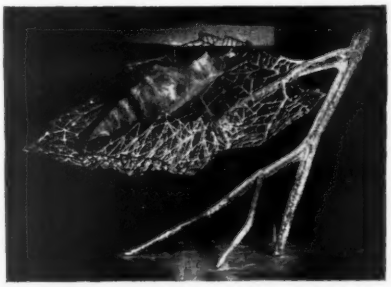
SHOWROOMS

in GROSVENOR STREET, LONDON, W.1

designed by DENNIS LENNON

These showrooms at 71-72, Grosvenor Street, have been converted for the display of beds manufactured by Vono Ltd. They are on the ground floor and basement and have a total floor area of 9,000 sq. ft. Standing on the pavement side of the window facing Grosvenor Street is a piece of sculpture designed by Lynn Chadwick, called " Chrysalis," depicting rest. The chrysalis is in copper and concrete resting on the veins of a leaf, in iron.



" Chrysalis," sculpture depicting rest.

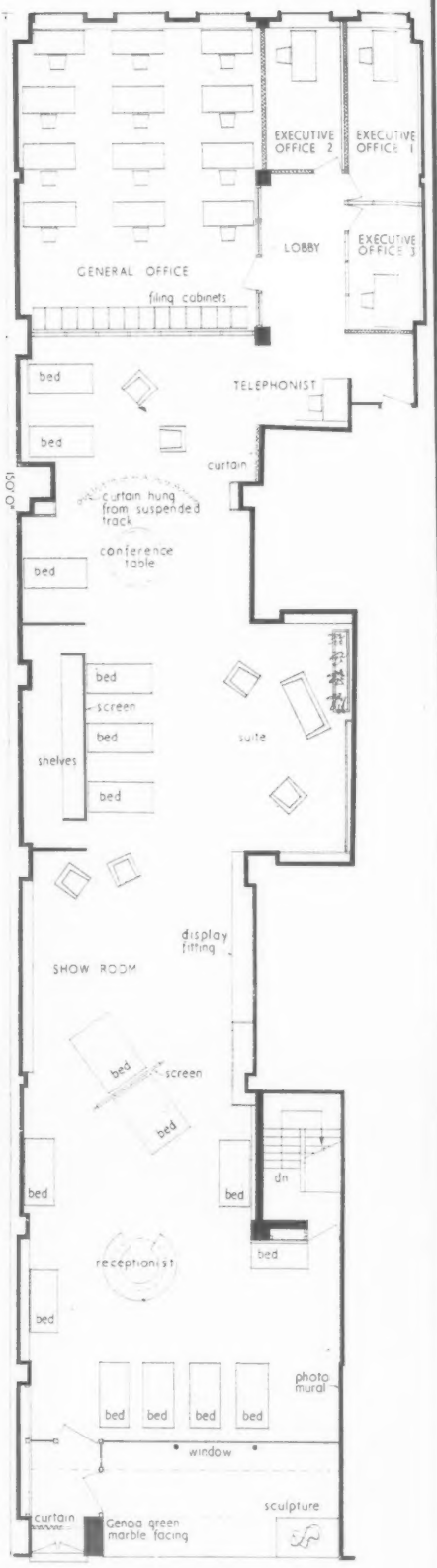
The showroom seen from Grosvenor Street.

SHOWROOMS

in GROSVENOR STREET, LONDON, W.1

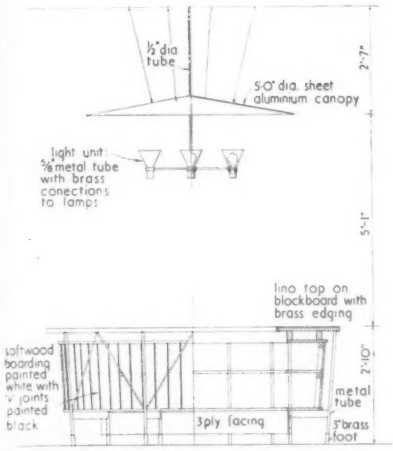
designed by DENNIS LENNON

Top, the ground floor showroom looking towards the glazed screen, behind which is the general office. Above, looking towards the show window.

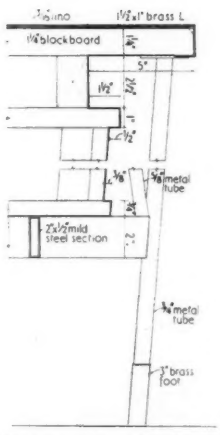


Ground floor plan [Scale : $\frac{1}{8}$" = 1' 0"]

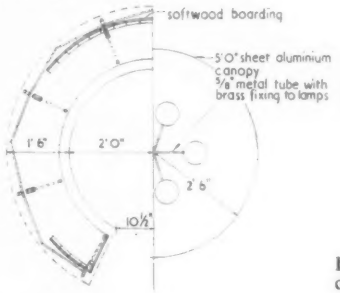
GENERAL.—On the right of the showroom window, which is recessed from the pavement line, is a large mural depicting London and the Thames as they were in about 1680, which is a photographic enlargement of the original in the LCC library. Where the mural is on the pavement side of the window it has been treated to withstand the weather. The entrance door surrounds and lobby walls are



Elevation and part section of desk and light fitting



Detail section of desk [Scale : 1½" = 1' 0"]



Left, plan of reception desk [Scale : 1" = 1' 0"]

Right, the far end of the showroom from the street. The semi-circular track is to carry a curtain. Below, the specially designed reception desk and light fitting near the main entrance door.

faced with green marble and the doors are painted black with a brass frame to the glazing and push rail. The exterior floor finish is of two colours of *in situ* terrazzo and the curved, suspended ceiling is of fibrous plaster. Internally, there is also a suspended ceiling to hide existing beams in the showroom.

Nine colours have been used on walls and ceilings on the ground floor; the colours used are purple, pink, yellow, orange, pale and dark blue, grey-green, black and white. Carpets are grey, lime green and mauve. As far as possible mattress covers displayed in the front of the showroom have been specially designed or chosen and colours in the showroom are related to them. The circular desk near the front of the showroom is in black, white and yellow. There are specially-designed sample fabric cupboards, where 250 designs can be seen.

The general contractors were David Esdaile, Ltd. Sub-contractors, page 752.

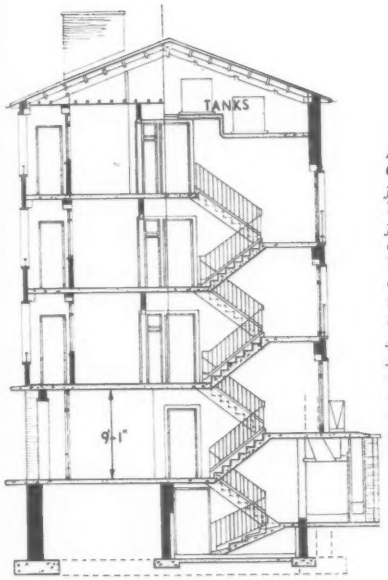
FLATS

1. in CONINGHAM ROAD and PERCY ROAD, SHEPHERD'S BUSH, LONDON, W.12
designed by DUGDALE and WHITAKER, quantity surveyors, HORACE W. LANGDON and EVERY

2. in STANMER STREET, BATTERSEA, LONDON, S.W. 11
designed by DAVIES and ARNOLD, quantity surveyors E. C. HARRIS and PARTNERS

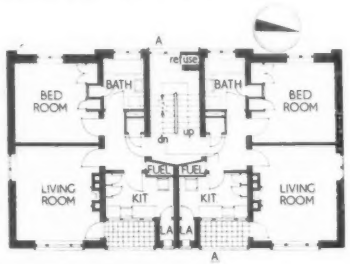
The two small blocks of flats illustrated on this page and opposite are both at Shepherd's Bush and were designed for the Borough of Hammersmith and erected by their Building Organization. The photograph below shows Coningham House, 91, Coningham Road, a free-standing block containing eight two-roomed flats and bottom right, on the opposite page, are two views of 57-59, Percy Road, a block of only 33-ft. frontage between party walls.

91 *Coningham Road from the north-east.*

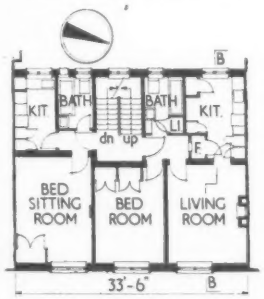


Section A-A [Scale : $\frac{1}{16}$" = 1' 0"]

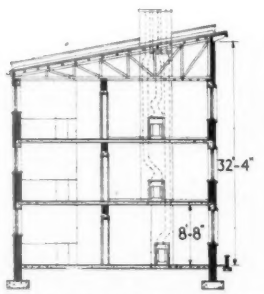
Right, the flats in Coningham Road from the south-west. The west facade is finished with a scraped grey rendering. The front and side elevations are finished with yellow facing bricks. The foundations of these flats had to be taken down through 4-ft. of consolidated hard-core to the basement of a previous building.



Coningham Road flats
Typical upper floor plan [Scale : $\frac{1}{16}$" = 1' 0"



Percy Road flats
Upper floor plan



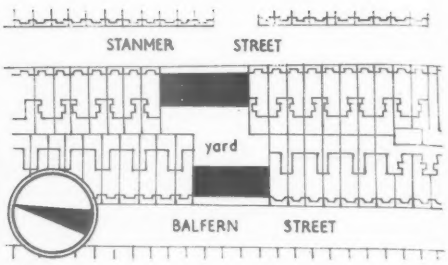
Section B-B [Scale : $\frac{1}{16}$" = 1' 0"]

GENERAL.—Both blocks have load-bearing brick walls and hollow tile reinforced concrete floors. Roofs are of timber, finished with wood-wool slabs and bituminous ply on the Coningham Road block and with copper on the single-pitch roof to the smaller block. The contract price for the larger block was £17,021 (2*s.* 7½*d.* per ft. cube and £3 5*s.* per ft. super) and for the smaller block, £8,821 (2*s.* 10*d.* per ft. cube and £4 per ft. super). Both were built by the Borough of Hammersmith Building Organization. Sub-contractors, page 752.

FLATS

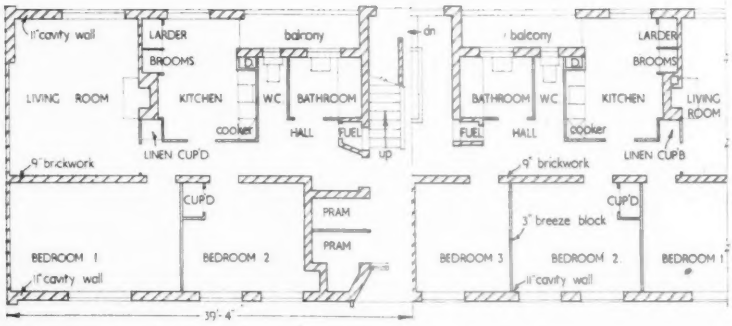
1. in CONINGHAM ROAD and PERCY ROAD, LONDON, W.12 designed by DUGDALE and WHITAKER

Right and extreme right, two views of the Percy Street block. The facing bricks are dark red and the underside of the broad eaves are painted grey with yellow sprockets.



Site plan

Left, the Stanmer Street block from the east. Below, part of the west facade of the same block seen from the communal drying and play area.



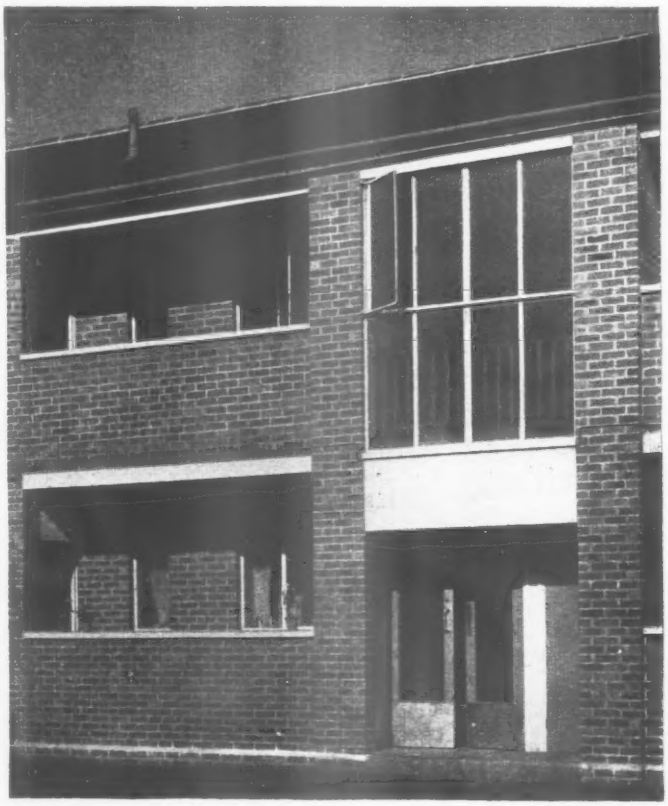
Part ground and first floor plans, Stanmer Street [Scale : $\frac{1}{16}$" = 1 0"]

FLATS

2. in BATTERSEA, LONDON, S.W.11
designed by DAVIES and ARNOLD

GENERAL.—These flats in two adjacent streets, Stanmer Street and Balfern Street, were designed for the Battersea Borough Council (Borough Engineer, H. Atkinson) to fill gaps in the original terraces caused by enemy action. Nine terrace houses, five in Stanmer Street and four in Balfern Street, were destroyed and these have been replaced by eight flats. Each block has a centrally placed entrance hall and staircase and between the blocks is a communal drying yard and play space. Walls are of 13½-in. cavity brickwork, floors are of precast concrete construction and roofs are of traditional timber trusses finished with slates. The recessed balconies to kitchens have iron railings painted grey. The windows are metal, painted ivory. Internally, halls and staircase walls are rendered and the walls of the flats are finished with emulsion paint. Floors are granolithic to staircases and halls and asphalt tiles elsewhere. Kitchens are fitted with built-in storage units. Domestic hot water is provided by a grate with back boiler in each living room, connected to a storage tank in the linen cupboard. Provision has been made so that electric immersion heaters may be fitted for summer use. Each living room and bedroom is equipped with an electric power point. All services and soil pipes are in ducts internally and have removable panels.

The flats were built by the Borough Council's building department. For sub-contractors, see page 752.



TECHNICAL SECTION

In considering ways in which the efficiency of the building industry could be improved, attention might well be paid to the position and function of the specialist consultant. Too often the architect calls in a consultant and finds, when the consultant's scheme is priced on tender, that the price is disproportionately high; and because the consultant refuses to reconsider the standard of performance or the means he has specified to reach that standard, something else in the building has to be sacrificed. To be frank, the consultant adopts this attitude because he has little to lose but his reputation and consequently tends to play safe every time. He is often unwilling to review the fundamentals of his speciality in the light of the changes wrought by new building techniques; and because he is not closely associated with the sub-contractor concerned he is discouraged from designing for economies which can be achieved in site installation. The solution to this latter problem may be to appoint consultant and sub-contractor together at the same time. But in any event, the consultant should be brought into the design team in the early days of the project, and be made acquainted with the inter-action of his speciality and the building as a whole. Even more important, he should be given a cost target and asked to keep within it, and he should be as eagerly imbued with the desire to produce an efficient and economical answer at the right price and at the right time as the architect himself.

This week's special feature

26 SERVICES AND EQUIPMENT
telephones

The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

Electrical installations, including the provision of telephone services, have not hitherto occupied the architect very seriously. He concerns himself with the fittings, but the network which connects them is more usually a matter for the ingenuity of the specialist. This week, D. L. Johnson, a telephone engineering surveyor, reports on some of the difficulties of this situation, makes his own suggestions, and gives a few of the basic facts about telephone installations.

The surveyor of a telephone installation is almost invariably confronted by a number of problems. He must place a rising cable so that it neither damages cornices nor looks unsightly. He must strike a balance between expensive cutting away and long or unsightly runs of cable. He must plan cable routes economically and efficiently. And he must do work that looks good.

As a rule the telephone installation is tidy and inconspicuous. But when no arrangements have been made in a building for accommodation of the cable, the tidy effect of the installation is the result of a great deal of thought and work. In older buildings the diffi-

culties involved in telephone installation are inevitable, but when facilities for installations are omitted from a building that is new or re-planned, someone is to blame. Quite often it is the architect. His working drawings cover water, gas, drainage, electricity and other basic needs, but not the telephone. The instrument on his desk works when he lifts the handset, and he is aware that it must be connected with the instrument on the other end of the line, but he makes no provisions for this connection on his drawings.

The provisions need not be elaborate (see Fig. 1). A two-inch conduit passing through each partition at skirting level, flush with the adjoining wall face,

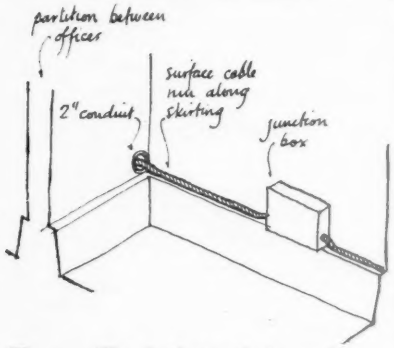


Fig. 1. The simplest method : surface run cables.

permits a cheap, straight and easy run along a perimeter. Conduits or floor ducts or ceiling cavities provide an easy passage across corridors and stairways. Small rising chases give access from floor to floor. From the telephone company's viewpoint this is an ideal installation if the conduit sizes are adequate and the ducts are in positions which coincide with the best horizontal runs. Surface fixing means that cables and junction boxes are available for maintenance and alteration, and on almost every job that is an important requirement. Every time a desk moves the telephone moves with it. Every staff re-shuffle means a re-distribution of phones.

This is a problem which becomes acute when cables are enclosed in conduit, because the conduit, buried in screed or plaster, is a fixture. The only way to move a telephone under these conditions is to depart from the principle of total concealment—a principle often advocated by the architect.

There are times when the conduit system provided gives more trouble to the telephone engineer than a building which has no facilities at all. The reason is that the responsibility for conduit installation is given to an electrical contractor, who may be unfamiliar with telephone practice.

Take, for example, a long narrow office building of nine floors, divided by a hall at each floor level. The long office spaces on each side of the hall required twenty to thirty telephones each, arranged mostly along the external walls. Conduits for all services were run in the screed under wood blocks. When the telephone engineer looked at the plans he found that the architect had provided a rising duct on each side of the building, with floor conduits feeding into the duct at each floor level. The conduits, specially allocated for telephones, were indicated by neat red lines on the plan, and floor traps were shown at intersection points. Frequent outlets were made from the conduit to the walls. A basement room of the right size was set aside for the central equipment.

On paper this was perfect, but it wasn't like that on site. First, there was no means of reaching the foot of the ducts from the basement room. Then, the ducts were shared with all other services and there was no room for adequate segregation from main cables and hot pipes. There was a door at each floor level giving access to the rising ducts, and if sufficient space had been allowed there would have been a junction box for each office space mounted on the wall inside the duct. Then, one of the ducts ended at the second floor and started again at an entirely different spot on the third. Finally, all the floor conduits were $\frac{3}{4}$ in. diameter—and they weren't even laid straight in the screed. Every now and then they dipped under other conduits, with bends almost as sharp as elbows. Not even a 5-pair could be pulled through them. The subsequent laborious compromise required a good deal of cutting away and a fair amount of surface cabling on bare walls where the cable was most conspicuous.

What the contractor did not realize was that each telephone instrument required an individual pair of wires back to the central equipment. The most economical cabling system provides a number of distribution points from which short lengths of one-pair cable radiate. The distribution points are junction boxes which concentrate the individual pairs into multi-core cables which in turn join other multi-core cables (see Figs. 2 and 3). These increase in size towards the central point until they may reach as much as $1\frac{1}{4}$ in. in diameter. This is the measurement for 100-pair PVC. Other sizes are approximately:

20-pair PVC	0·50 in.	*Note:* the min. bend
25-pair PVC	0·55 in.	radius for PVC
50-pair PVC	0·75 in.	cables is 5 × dia. (approx.)

Cables with other than PVC insulation are generally of large diameter.

Dimensions of junction boxes are as follows:

Capacity	Length	Width	Depth
10-pair	$10\frac{1}{2}$ in.	4 in.	3 in. (plastic)
25-pair	13 in.	9 in.	$3\frac{3}{4}$ in. (wood)
240-pair	33 in.	22 in.	6 in. (wood)

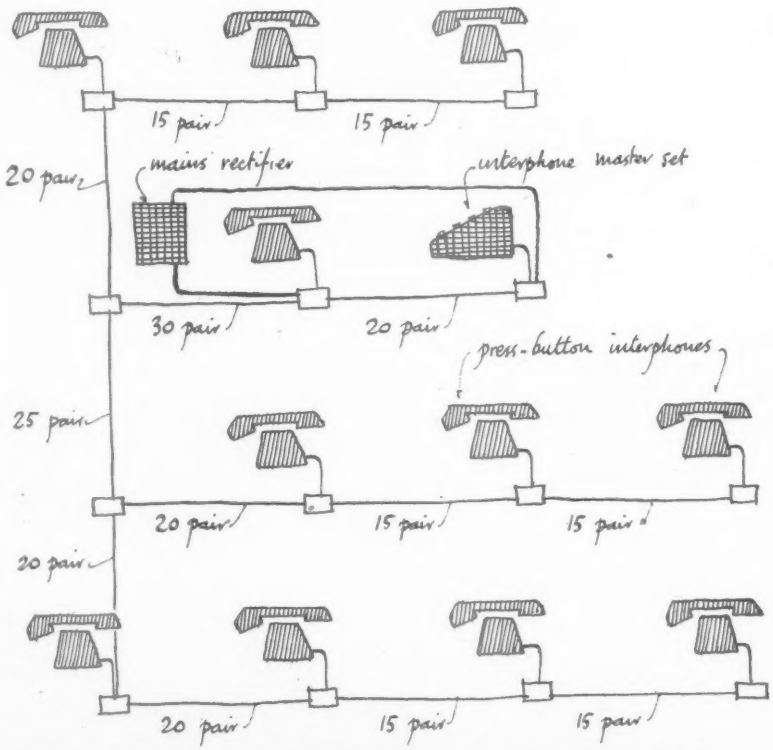
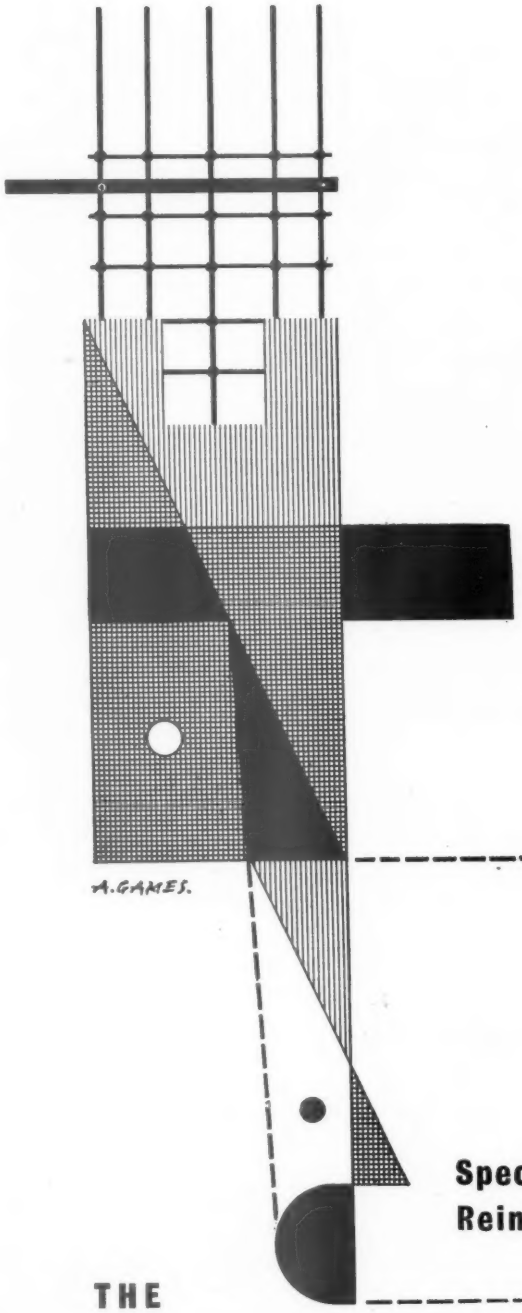


Fig. 2. Diagrammatic layout of press-button interphone system with master set.
Note: Without master set, up to 11 sets, 10 pair cable throughout.
" " " up to 21 " 15 " "



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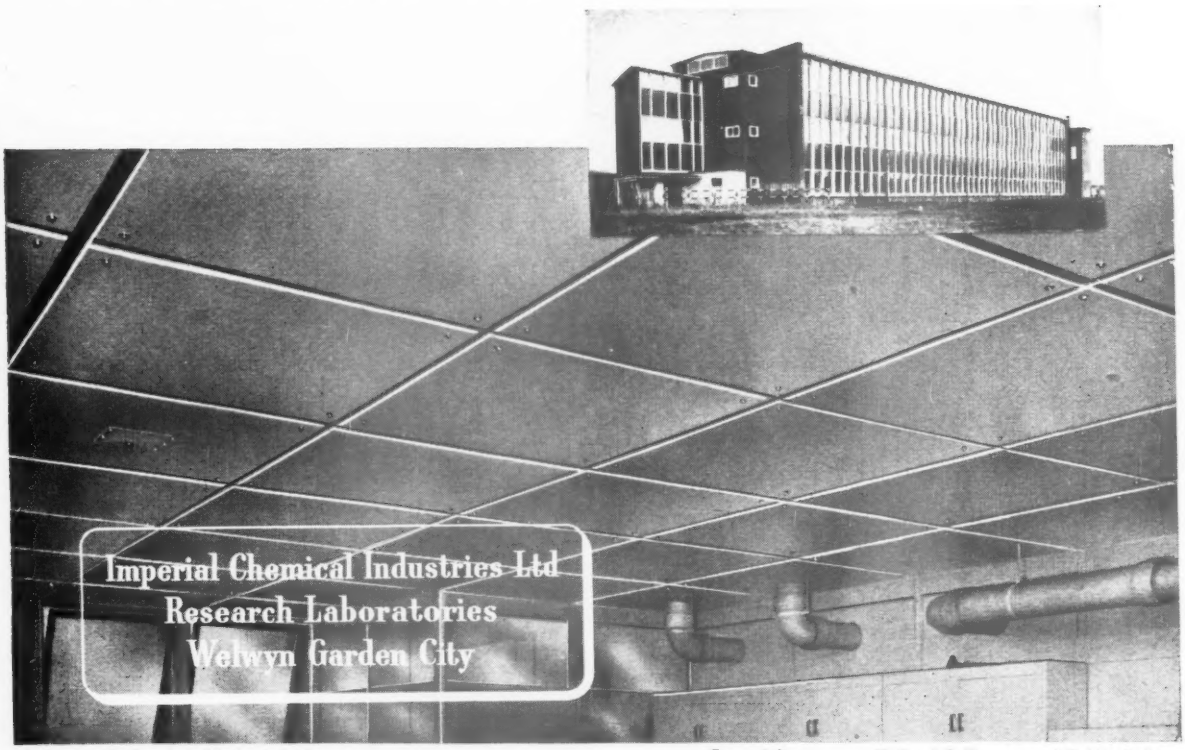

Architects: J. Douglass Mathews & Partners

General Contractors: Holland & Hannen and Cubitts Ltd.

The constructional feature of the ceiling panels was a core of 1½" compressed granulated cork slab bonded on both sides to sheet Aluminium, the underside sheet being perforated to provide sound absorption. A synthetic resin adhesive was used which would, in fact, withstand immersion in boiling water. The size of each panel was 3' 10" x 3' 10" and the metal was turned over on all edges to make a seal. They were grooved for fixing with "Armourply" strips, 2" wide, to make up the 4' module.

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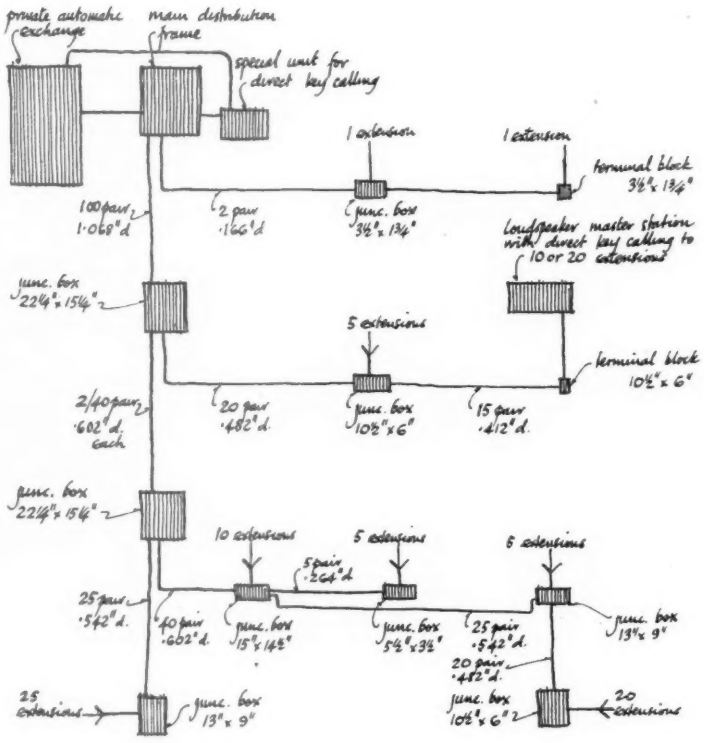


Fig. 3. Diagrammatic layout of P.A.X. (Private Automatic Exchange) system.

From the foregoing it is obvious that a conduit system should be planned (*a*) to suit the most efficient cable distribution scheme, and (*b*) under the supervision of a telephone engineer. Even this is fraught with difficulties, because the distribution of telephones depends upon the needs of the tenant, which are not always known in the early stages; but as a rule it is possible to make intelligent guesses even in the drawing-board stage.

In the case described the minimum number of vertical chases would have been four, one on each external wall and one on the opposite internal partition, thus feeding each office space on both sides. From the junction boxes in each chase, multi-core cables would run behind the skirting to subsidiary distribution points. The position of the chases on plan would depend partly upon the expected distribution of telephones and partly upon the position of the exchange equipment, the aim being to achieve the shortest total length of cable.

The value of the duct behind the skirting is that cables may be brought out at any point, either during installation or afterwards. If telephone positions in the centre of the office spaces were required, these could be reached *via* conduit to pillars or suitable floor traps. By laying a *separate* telephone conduit system of this kind, the expense and technical difficulties involved would have been minimized considerably, and amendments to the telephone system made without fuss.

The skirting duct is one of the best means of providing flexibility. Some excellent forms of metal trunking are manufactured (see Fig. 4), providing two

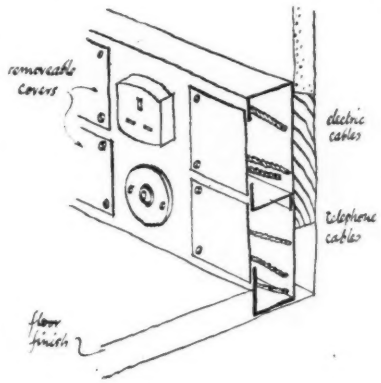


Fig. 4. Metal duct skirting.

or three channels which permit segregation of mains from low voltage services, etc., but it is not always necessary to use such elaborate arrangements. An ordinary wooden skirting can be adapted by running the grounds horizontally and fixing the skirting with brass cups and screws (see Fig. 5). If this is set proud of the wall so that the top can be drilled for cable entry, nothing will be visible except junction boxes, terminal blocks and the telephone flex. There must be access to the top, *i.e.*, frequent breaks in the upper grounds, and the detachable covers must not be obstructed by flex passing through them or blocks fixed to the surface; in some cases boxes could be inset into fixed sections of the front.

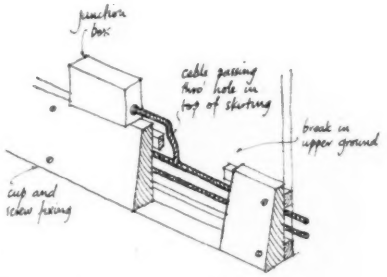


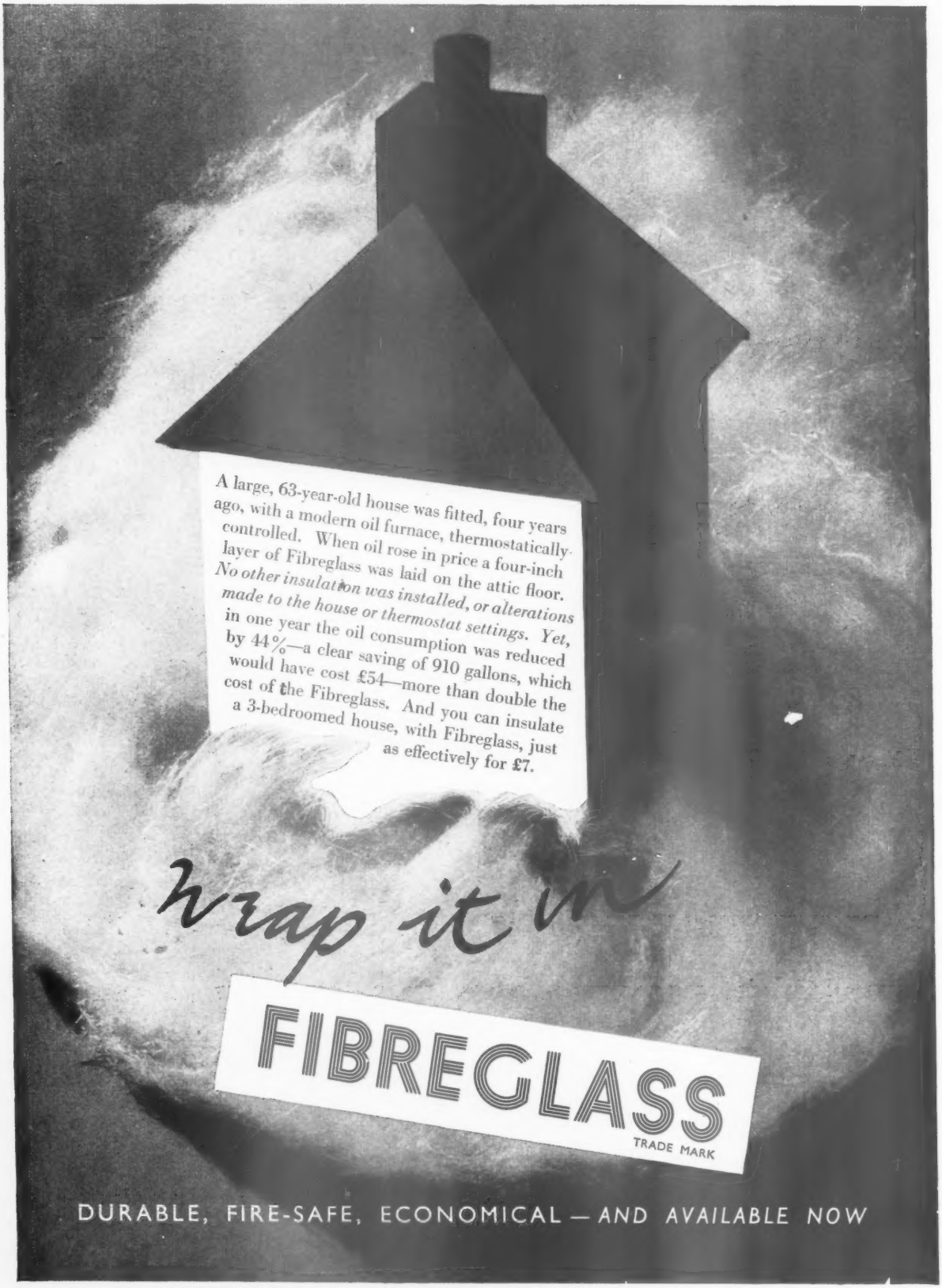
Fig. 5. Cables run behind detachable skirting.

This does not overcome the difficulty of reaching positions in the middle of a floor, which is a perennial headache. The remedies vary with individual jobs, and are seldom applied anyway, for the most common method is to trail the flex across the floor. Telephone companies do supply capping, of metal or wood, which covers cable running across the floor surface, but this offers imperfect protection, especially when crossing an open space, and is a hazard to staff. In any case the problem of terminating the cable remains. One method is to provide a floor duct to feed "island sites" or "island desks" (see Fig. 6). The desk positions should be fixed, so that terminal blocks, in which cable is connected to flex, can be installed in the desk well with little risk of damage. Another solution would be for architects to design special pedestals with solid sides to support the instrument and protect the terminal block (see Fig. 7). This is especially suitable for the more elaborate sets such as loudspeakers with direct-calling keys, because these require multi-core cables and correspondingly larger blocks. A master set or a press-button interphone requires 15-25 pairs, with a minimum diameter of about one-third of an inch.

The cable should leave the floor duct through a bush or a gland, and access to the duct should be provided by a floor trap, preferably with a cover free from bushes or glands.

Fig. 2 shows a loudspeaker master set. It should be emphasized, however, that with a Private Automatic Exchange direct connections to sub-sets are through apparatus in the exchange room, and sub-sets have no more than the normal one-pair cable.

The subject of floor ducts recalls another unfortunate example. In this case the designers were aware of the varying sizes of telephone cables, so they installed a system of large asbestos ducts in the floor leading to shallow pits with



Fibreglass Limited, Ravenhead, St. Helens, Lancs. (St. Helens 4224)

circular covers—one in each office (see Fig. 8). But these pits were at least three feet from the nearest wall, and in some cases there was no way of getting cable

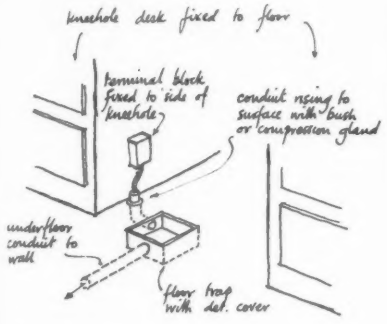


Fig. 6. Floor duct feed to "island" desk.

connection to the instrument except by leaving the lid off. Where conduits from the pits to the wall were provided, they were ¾ in. only. Because of inadequate access to the walls, the large ducts were wasted, and the cabling system, consisting wholly of one pair, was grossly uneconomical.

Another difficulty with floor duct distribution of this kind concerns junction boxes. These are used when sections of the system are isolated for tracing faults, and they must consequently be accessible; which is not easily achieved when the junction box is below the floor finish.

A more recent difficulty arises in connection with suspended types of ceiling heating systems as the Frenger. These are normally associated with false ceilings, with a cavity above the heating elements, and the architect naturally wishes to use this cavity for conduits and cables. The first problem to occur to the telephone engineer is the effect of heat upon his cables. In lead-covered cables, the wires are insulated with silk and cotton impregnated with wax, which tends to run when very hot. Other cables are insulated entirely with PVC, but this is apt to become less plastic if baked for a long time, and, when it is brittle, the insulation may be broken. A reasonable working range for PVC is from 40 deg. to 70 deg. C. However, it is reasonable to suppose that there will be effective heat insulation between the pipes and the cavity, to deflect the heat into the space where it is required, so the next problem is accessibility. This should be from the floor above, as the cables in the cavity would most likely feed instruments on this level. It should be possible to pull cables into the cavity after completion of the false ceiling, and to pull old cables out, if necessary. For this reason trunking or conduits are recommended, depending on the size of the cables, with sufficient access points to facilitate pulling in. Apart from bends and junctions, the spacing of pulling-in points is dictated more or less by the length of a draw-in

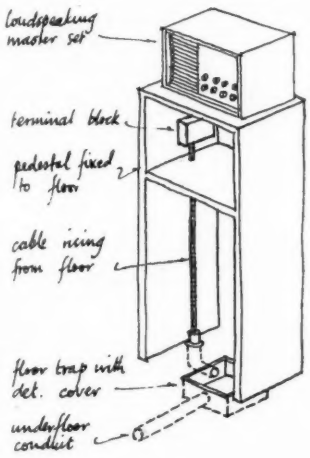


Fig. 7. Floor duct feed to special pedestal fitting.

tape, and differs little from normal electrical practice. There must be access to walls, where junction boxes may be fixed, and access to rising ducts. Where false ceiling panels are detachable, the cables could be carried on trays or simply fixed to walls and beams, but a practical system on these lines is rare.

Many other problems arise—different ones on every job, but if they are known to the architect—and he consults the right expert—they will be solved.

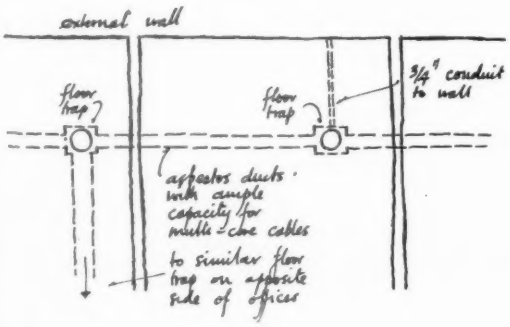


Fig. 8. The wrong kind of provision for the telephone engineer.

INFORMATION CENTRE

A digest of current information prepared by independent specialists; printed so that readers may cut out items for filing and paste them up in classified order.

10.113 design: building types
SCHOOLS IN SCOTLAND

School Building in Scotland. Planning Primary Schools. Scottish Education Department. (HMSO, 1954. 1s. 6d.)

First of a series of handbooks on Schools in Scotland. Much of the advice follows that already familiar through the English Ministry of Education handbooks. Elimination of corridors, use of space for dual purposes, small and divided cloakroom areas and classrooms with windows on two sides, not north but also usually not south. Good diagrams illustrate possible solutions.

Appendices show calculation of maximum permitted area for single-stream and two-stream schools and areas of illustrated types, also a table of sanitary and cloakroom requirements.

17.102 construction: general
REINFORCED CONCRETE CONSTRUCTION

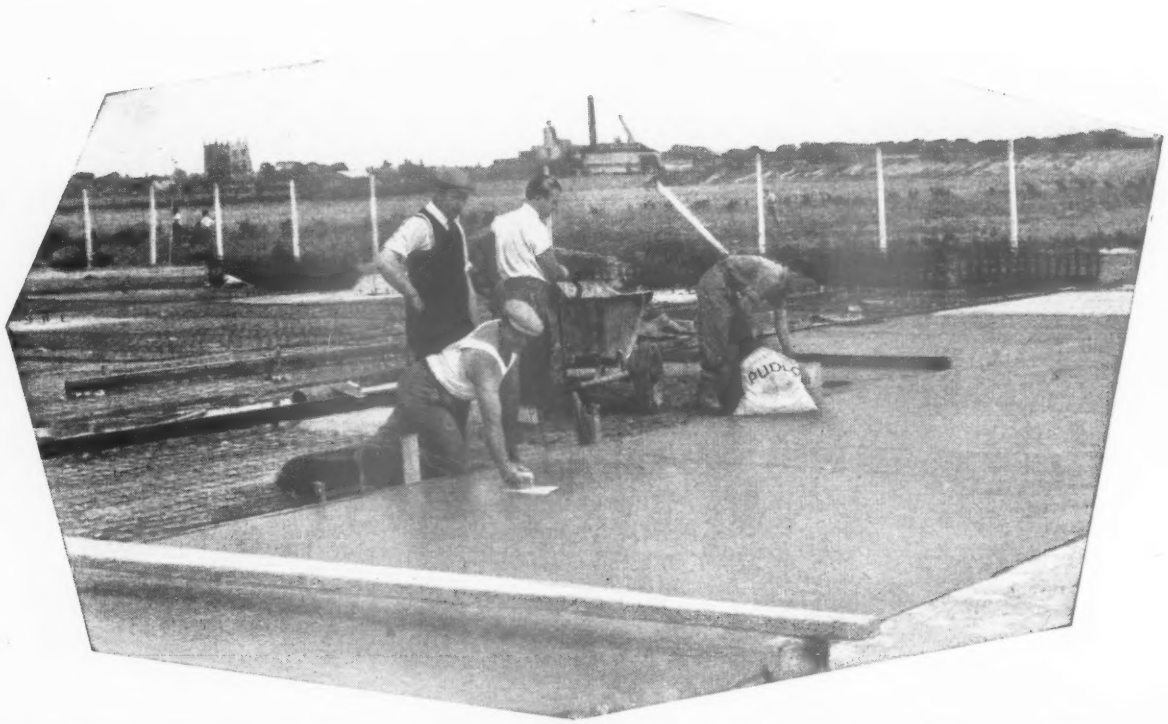
Faults in concrete structures. P. G. Bowie. (The Structural Engineer, March 1952).

Paper read before Institution of Structural Engineers suggests normal design practice. provides adequate reserve strength in a reinforced concrete building but states that extra precautions may be required where structure is exposed to weather. Interesting to architects and engineers.

Examination of reinforced concrete structures erected during the last 50 years, and particularly structures of more recent origin subjected to bomb damage but nevertheless repaired and re-used, provides no evidence to show that within a building reinforced concrete as designed in the past is not virtually permanent.

The durability of concrete is affected by factors of a chemical nature due to its composition or surroundings, physical considerations such as frost and heat and factors connected primarily with the detail design of the structure. The aggregates generally used in this country provide no trouble, the present cement standards of manufacture rule out "blowing," and impurities in the mixing water have been found to have little effect except in the case of sugar and related compounds.

Inside buildings the most obvious faults occur in applied floor finishes; a problem which can usually be overcome by adequate consideration of joints in the finish. No material of alkaline character can be expected to resist attack by acids whether due to spillings or gases from plant. In such cases a positive protection is desirable. Externally a structure is subject to far more extreme conditions, the range of temperature is greater and moisture is generally present with greater liability to corrosion of reinforcement. The more obvious faults



PUDLO GUARDS AGAINST RISING DAMPNESS AFTER THE WORST FLOODS FOR YEARS

In January 1953, the defence wall holding back the tidal waters of the River Great Ouse was breached by the high tides.

As a result of this disaster the site of the Fropax Canning Factory at West Lynn was flooded to a depth of approximately six feet and the water remained over the site for many weeks before it was pumped back over the sea wall.

The architect decided to guard against any rising dampness in the new floor of the factory by incorporating 'PUDLO' Brand Waterproofer in the 1 inch topping of waterproofed cement applied to the ordinary under-concrete. The topping was composed of :—

1¾ parts ¼" granite chips,
¾ parts coarse, washed sand.
1 part Portland Cement.
5 lbs. 'PUDLO' Brand Powder to each 100 lbs. cement.

Architect: C. J. Downing Esq., Engineers Dept. Fropax (Ware), London, E.C.1

Builders: Warren Bros, Clenchwarton, King's Lynn.

'PUDLO' BRAND

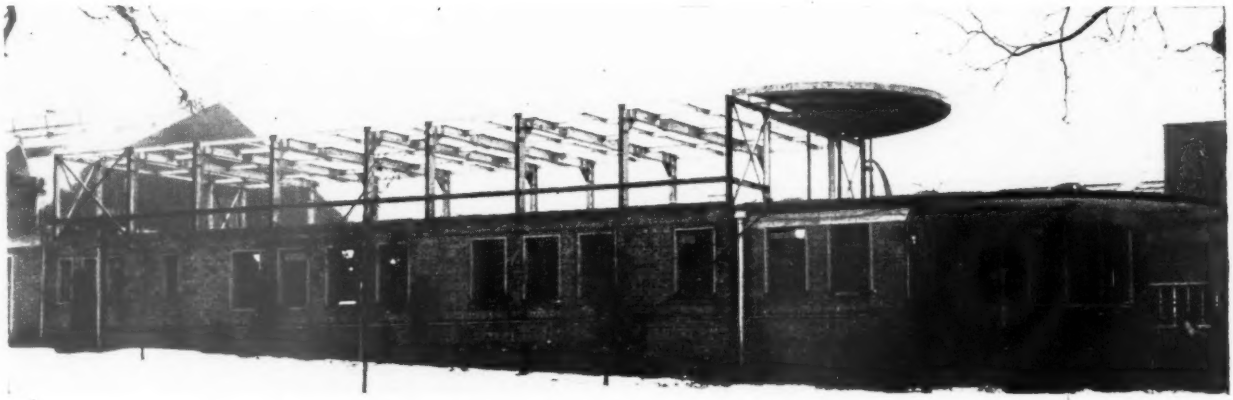
CEMENT WATERPROOFING POWDER

The most reliable fire cement is 'FEUSOL'. Have you tried it?

The word 'PUDLO' is the registered Trade Brand of Kerner-Greenwood & Co. Ltd. by whom all articles bearing that Brand are manufactured. Sole Proprietors and Manufacturers:

KERNER-GREENWOOD & CO. LTD., KING'S LYNN, NORFOLK

AN ALL-WELDED ALUMINIUM ALLOY SUPERSTRUCTURE



The extension of the Ferodo Ltd., offices at Chapel-en-le-Frith (Contractors and designers, Head, Wrightson & Co. Ltd.) involved erecting a second storey on a building not specifically designed for that load and consequently an aluminium structure and light-weight cavity decking were employed. To enable low head room to be achieved and to avoid passing bending moments down to the lower storey structure, a two-pin portal was designed with welded knee-joints, welded rocker-plates and a bolted joint for erection purposes at quarter points in the beam. This is thought to be one of the first all-welded frames to be erected. The extrusion used was HE 10 WP and an increased safety factor was used to allow for the reduction in the mechanical properties due to welding. The heaviest member was only 2 cwt. in weight and a foreman and 3 men erected the structure in 95½ working hours. The semi-circular canopy structure consists of 5 aluminium alloy plate girders, extending radially from the main structure, being supported at the centre by mild steel tubular columns. 8.g. alloy sheets form the roof and a false ceiling of asbestos sheet is suspended from the underside of the girders. To obtain a uniform slope of the canopy sheets, the top flanges of the girders were tilted relative to the webs, a form easily achieved by use of the welded construction.

here take the form of spalling of the concrete due to corrosion of the reinforcement, the moisture having reached the steel either through porosity of the concrete, through faulty construction joints, or by way of cracks due to stress or shrinkage. Porosity may be caused by bad mixing, segregation, incomplete consolidation, too little cement, etc., allowing leaching to occur and protection is thus gradually removed. Reinforcement is probably too often inserted where not necessary in sills or minor projections where insufficient cover can be applied. Construction joints are not easily made watertight and a specification should be rigidly adhered to. It requires proper stop boards, the hacking of the old concrete and the application of neat grout before bonding on the new concrete. Small movements of the reinforcement after the concrete has partly set can lead to formation of cavities and reveal the necessity of putting it into position by means of concrete washers or spot welding. Cracks may be caused by thermal movements (the foundation being virtually fixed while the upper floors move, tending to rock the outer columns), and suitable jointing may again be applied. Examples of deterioration in sulphate bearing soils or water are sufficiently numerous to require enlargement here. The remedies of sulphate or super-sulphated cement are available.

For the engineer the obvious course is to avoid the use of details leading to saturation of the concrete. Fine gradings requiring a lot of mixing water should be avoided. Projections on which water might collect (copings or sills) should have a considerable slope and not be made up subsequently with mortar. Whatever the cause of the cracks may be, there is little doubt that for external work more cover than specified in early rulings is desirable. This is advantageous for its extra protection and because it allows better consolidation around the bars.

18.152 construction: theory
SOIL INVESTIGATION

Soil Survey Procedure. Road Research Technical Paper No. 15. (HMSO. 1954. 1s. 9d.)

Second edition of paper first issued in 1949. Present edition sets out current views on the subject and emphasizes the importance of mechanical boring.

The paper deals with staff and equipment required, soil survey procedure, ground water investigations and soil identification and classification. Seismic and resistivity methods and a method of soil classification for roads and airfields are described in detail.

18.153 construction: theory
STRUCTURAL DESIGN

Structural Engineering in the United States. F. Newby. (Architectural Design. April, 1954. pp. 106-111.)

An engineer's impression of current practice and technique in the USA. Interesting both to architects and engineers.

While most of the buildings and techniques illustrated in this article have been covered in the Technical Section during the last two years, the article is useful in providing an overall survey with first hand impressions. Lift slabs, tilted walls, lightweight floors, light-weight cladding, space frames, timber beams and domes are mentioned. There is an interesting paragraph on the relation between client, architect and engineer and another on building trends.

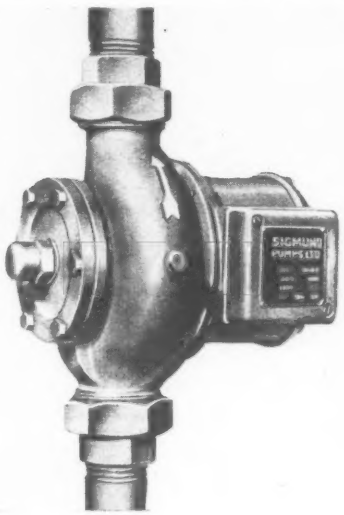
THE INDUSTRY

From the Industry this week Brian Grant reports on circulating pumps, a new fire detector, a floor sealing compound, electrical safety, and projected windows.

CIRCULATING PUMPS

Almost any hot water central heating system needs some form of accelerator pump to make certain that all radiators are adequately served. This does not normally apply, of course, in domestic work, where thermo syphon circulation will usually do all that is required, but in anything larger than this an accelerator is the simplest way of ensuring proper water circulation and will often allow smaller pipe sizes to be used. In the years before the war the usual accelerator was quite a large assembly with a motor and pump unit mounted separately on a cast iron bedplate which in turn had a concrete foundation block, the whole taking up quite a lot of floor space, and often incidentally, producing quite a lot of noise, so that the connections to the heating system had to be made with flexible hose to prevent the vibrations from being distributed through the pipework. The Sigmund Thermo Pak unit overcomes most of these troubles, for it is light enough to be supported by the pipework, and at the same time the motor is almost noiseless. There is a range of

sizes to suit pipes from 1 to 2 inches diameter, and the pump has no glands whatever to leak or need re-packing. The stator windings are separated from the rotating motor armature by a shell of non-magnetic metal. The bearings are stainless steel and bronze, lubricated by the circulating water, the whole system being a variation of that used in some types of submersible pump, all rotating parts, including the motor armature, running in water. As a result the electrical windings of the motor can be removed as a unit without breaking any water seal, while at the same time the rotating element can be withdrawn after removing the bolted on cover plate: no pipe joints have to be disturbed. All pumps are tested to a pressure of 100 lb. per square inch. (*Sigmund Pumps Ltd., Team Valley, Gateshead* 11, *Co. Durham.*)



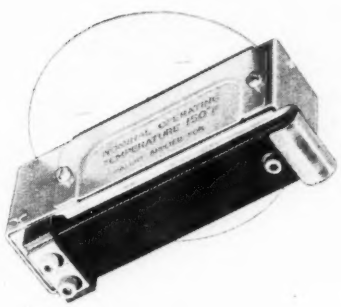
The Sigmund Thermo Pak Unit.

FIRE DETECTION

Gents of Leicester showed for the first time at the BIF, a new type of fire detector which should overcome most of the disadvantages and uncertainties of the usual type. As with many other detectors, a bi-metal strip is used, but the strip itself does not open or close the alarm contacts, but releases a catch which tilts a mercury tube. The contacts in the tube may be arranged either to make or break the electrical circuit, depending on whether or not the alarm system is of the closed or open circuit type, the tilting of the tube giving a definite quick action, thus avoiding the common trouble of dusty or dirty contacts on the plain bi-metal strip alarms. The detector can be set to operate at any predetermined degree of heat, and the back plate is designed to fit standard conduit bases. (*Gent & Co., Ltd., Faraday Works, Leicester*).

NEW FLOOR SEALING COMPOUND

With the freeing of timber from restrictions, wooden floors are being far more widely used, and Messrs. Tretol have produced a sealing compound which penetrates the wood fibres and gives a hard and smooth finish which is resistant to traffic. The seal is applied in two coats, and existing floors, of timber, cork or linoleum should be cleaned, and any varnish or wax polishes removed. One gallon of sealer is enough to cover 50 square yards with two coats. (*Tretol Associated Products Ltd., 12 North End Road, London, N.W.*11.)



Gent's Fire Detector

The Remlock Night Latch.

LOCKING THE FRONT DOOR

Many insurance companies dislike the ordinary spring tumbler night latch and insist on lever mortice locks which cannot be sprung open from outside. The new Remlock is a night latch in appearance, but the bolt has a final "closed" position in which it is fully shot, having a projection of a full inch with a positive deadlock. There is an additional device whereby the internal handle can be locked as well. Price is 39s. 6d. and distribution is via builders' merchants and hardware factors. The manufacturers (*Remploy Ltd.*, 25, *Buckingham Gate, London, S.W.*1) are, as most readers will know, an organization which exists to provide employment for severely disabled persons, nearly half of whom are ex-servicemen.

ELECTRICAL SAFETY

The Electrical Development Association has recently issued a very useful little book called *Safe as Houses.* It points out what most of us already know—that electricity is perfectly safe if the original installation is well done, and if it is properly maintained, but that it is potentially very dangerous if fools (and this means far too many householders) are allowed to monkey with it. The book gives a series of simple reasons for the mistakes to be avoided and the normal safety measures which should be taken, and it would be no bad thing if local supply authorities were to make it a rule to present a copy of it to everyone moving into a new house. (*The British Electrical Development Association,* 2, *Savoy Hill, London, W.C.*2.)

"PROJECTED" WINDOWS

The section on the right shows the Crittall Projected window, in which both ventilators are balanced on steel arms which are housed within the vertical frames of the section, the arms being pivoted at each end and concealed when the ventilator is closed. Spring loaded brass shoes are fitted at the top of the projected-out ventilator, and at the bottom of the projected-in ventilator, and slide in brass guides contained in the channel of the fixed frame.

The windows are intended for schools, multi-storey flats and industrial buildings, the projected-out ventilators forming a weather protecting canopy, while the projected-in deflect incoming air upwards and at the same time shed rain to the outside.

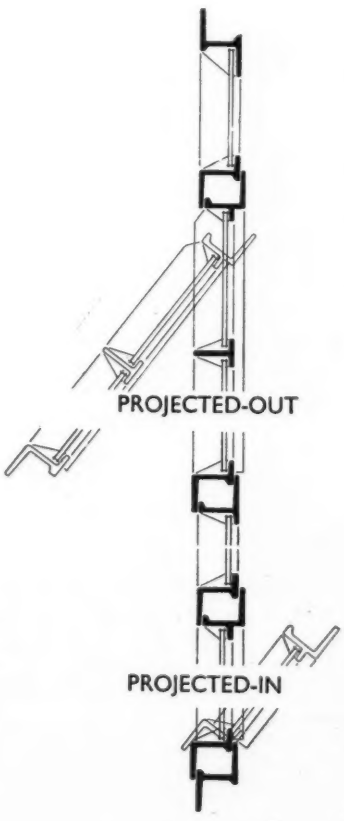
Sixteen standard sizes are made, in four widths from 2 ft. 2½ in. to 4 ft. 3½ in. wide and from 4 ft. 8⅝ in. to 9 ft. 4 in. high, but all types can be coupled together with a standard mullion to form larger composite windows.

The windows are fitted with lever handles, or ring levers if they are beyond normal hand reach. All windows are hot-dip galvanized. (*The Crittall Manufacturing Co. Ltd., Braintree, Essex.*)

STANDARDS FOR PUTTY

In the days before the war the National Association of Putty Manufacturers used the NAP certification trade mark on material produced to a specification approved by the Board of Trade. When linseed oil ceased to be available for putty making, the mark was dropped, but now that supplies are more freer it has been revived, and appears on all kegs and packages whose contents conform to the specification. The Association, incidentally, has the right to test samples and to visit members' works if necessary.

The existing standard applies to normal linseed oil and whiting putty only, the type used for glazing timber window frames. A standard for metal glazing putty is also being considered. (*The National Association of Putty Manufacturers,* 12, *Buckingham Street, Strand, W.C.*2.)



The Crittall Projected Window.

Readers requiring up-to-date information on building products and services may complete and post this form to the Architects' Journal 9, 11 and 13, Queen Anne's Gate, S.W.1

ENQUIRY FORM

I am interested in the following advertisements appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers' names please.)

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Please ask manufacturers to send further particulars to :—

NAME .....

PROFESSION or TRADE

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ADDRESS .....

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17.6.54

Buildings Illustrated

Rigid section building for Fibreglass Limited at St. Helen's, Lancashire. (Pages 736-738.) Architect: Cecil C. Handisyde, A.R.I.B.A. Assistant: W. H. Drake, A.R.I.B.A.; Structural Consultants, Clarke, Nicholls & Marcel; Heating Consultant: J. D. Blakeley, M.SC., F.I.C.; Quantity Surveyors: Cameron & Middleton. General Contractor: J. Jones (Woolton) Ltd.; Subcontractors and suppliers: piling, The Cementation Co. Ltd.; structural steelwork, Banister Walton Ltd.; heating, Weatherfoil Heating Systems Ltd.; ventilation, Colt Ventilation Ltd.; lighting (part), Higgins & Cattle Ltd.; asbestos roofing, Blackwell Stanistreet Co. Ltd.; patent glazing, Heywoods Ltd.; felt roofing, William Briggs Ltd.; plumbing, decoration, E. W. Kneen; granolithic floors, Plastona Ltd.; Terrazzo floors, A. Quiligotti & Co. Ltd.; metal windows, Monk Metal Window Co.; suspended insulated ceilings, Insulatall Services Ltd.; insulation, Fibreglass Ltd.; hardened tiling, Stelcon; steel mesh flooring, Allan Kennedy & Co. Ltd.; facing bricks, Greengate Brick & Tile Co. Ltd.; paints, Goodlass Wall Ltd.; ironmongery, Yannedis & Co. Ltd.; plastering, Pollock Bros. (London) Ltd.; w.i. balustrades, George Low & Sons Ltd.; asbestos sheeting, Cape Asbestos Co. Ltd.

Showrooms for Vono Ltd. at 71-72, Grosvenor Street, London, W.1. (Pages 739-741.) Architect: Dennis Lennon, M.C., A.R.I.B.A. Sculptor: Lynn Chadwick. General contractors: David Esdaile & Co. Ltd. Subcontractors: light fittings, Troughton & Young (Lighting) Ltd.

Flats at Coningham House, 91, Coningham Road, and at 57-59, Percy Road, Shepherds Bush, London, W.12, for the Metropolitan Borough of Hammersmith. (Pages 742-743.) Architects: Dugdale & Whitaker, A/A.R.I.B.A. Quantity surveyors: Horace W. Langdon & Every. General contractor: Borough of Hammersmith Building Organisation. Subcontractors: reinforced concrete, Caxton Floors Ltd.; facing bricks, H. J. Greenham Ltd.; artificial stone, Girling's Ferro-Concrete (Coningham Road only), Wadcrete Ltd. (Percy Road only); wall tiles, W. B. Simpson & Sons Ltd. (Coningham Road only); special roofings, Frederick Braby & Co. Ltd. (Percy Road only); roofing felt, General Asphalte Co. Ltd. (Coningham Road only); patent flooring (Accotiles), Neuchatel Asphalte Co. Ltd.; "Chevin" self-contained boiler sets, W. N. Froy & Sons Ltd.; electric wiring, S. Goodchild; sanitary fittings, Pryke & Palmers Ltd.; stairtreads, Stuart's Granolithic Co. Ltd. (Coningham Road only), Ventor Terrazzo & Mosaic Co. (Percy Road only); door and window furniture, Nettlefold & Moser Ltd.; casements, Midland Woodworking Co. Ltd. (Coningham Road only); flush doors, Clissold Joinery Ltd.; paint, Sumex Paints Ltd. and Cement Glaze Ltd. (Percy Road only); kitchen fittings, E. & H. Grace Co. Ltd. (Coningham Road only).

Flats at 32-40, Stanmer Street, and 33-39, Balfern Street, Battersea, London, S.W.11, for the Battersea Borough Council (Borough Engineer, H. Atkinson, A.M.INST.C.E.). (Page 744.) Architects: Davies & Arnold, F.R.I.B.A. Quantity surveyors: E. C. Harris & Partners. General contractor: Battersea Borough Council, Sub-contractors: concrete, Concrete Ltd.; bricks, Woodside Brick Works Ltd.; flooring, Armstrong Cork Co. Ltd.; fireplaces, B. Finch & Co. Ltd.; water heaters, Ascot Gas Water Heaters Ltd.; casements, Crittalls Manufacturing Co. Ltd.; steel balustrading, T. W. Palmer & Co. Ltd.; joinery (doors), Magnet Timber Ltd.

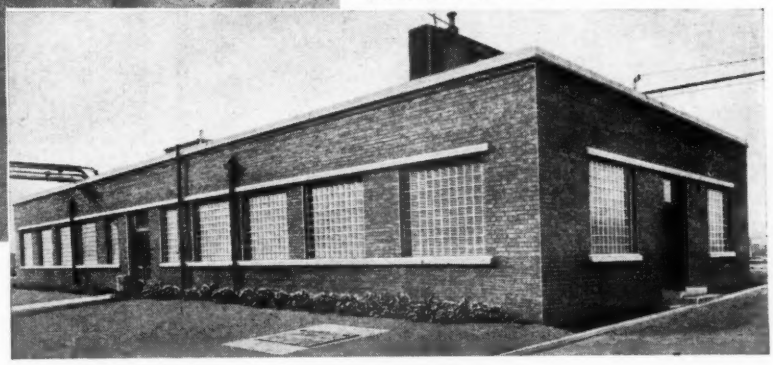
Correction

In the Technical Section of May 13, 1954, Douglas Stapleton & Partners were stated to be the designers of Cruden Houses Ltd.'s Tropical Bungalow. This was incorrect, the designers being Douglas Stephen & Partners.

Why are they here?

Antibiotics factory, Speke, Liverpool

Left: Controlling the "freeze-drying" process.
Below: Exterior view of the physiological department.



By courtesy of The Distillers Company (Biochemicals) Ltd.
Architects: Yates, Cooke & Darbyshire.

"INSULIGHT" HOLLOW GLASS BLOCKS

WERE USED BECAUSE . . .

Nearly all the processes involved in the manufacture of penicillin and streptomycin must be carried out under the most rigorously aseptic conditions. Indeed, the final filtration and filling of the drugs is done in totally enclosed rooms, supplied with sterilized air, the temperature and humidity of which are rigidly controlled. In such circumstances, "INSULIGHT" Hollow Glass Blocks are an obvious choice for glazing. For ease and efficiency in cleaning they present a far superior surface to the usual wood or metal frame glazing, and they require no surface treatment or maintenance. Their heat insulation properties are another vitally important feature, reducing heat losses, and so helping to maintain the temperature inside at a constant level regardless of conditions outside.

Consult the Technical Sales and Service Department at St. Helens, Lancs., or Selwyn House, Cleveland Row, St. James's, London, S.W.1. Telephones: St. Helens 4001, Whitehall 5672-6.

Send for the free booklet giving fixing details for "INSULIGHT" Hollow Glass Blocks.

PILKINGTON BROTHERS LIMITED

Supplies are available through the usual trade channels. "INSULIGHT" is the British registered trade mark of Pilkington Brothers Limited

BRITISH GLASS PB

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CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

Public and Official Announcements

25s. per inch; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

MINISTRY OF WORKS, MANCHESTER.

Temporary ARCHITECTURAL ASSISTANT required.

Salary range £410 to £655 p.a.

Qualifications:—Minimum age 21 years. At least three years' Architectural training, plus experience in an Architect's office. Able to carry out working drawings from prepared sketch plans and elevations under supervision.

Apply to:—Establishment Officer, Ministry of Works, Warwick Road South, Manchester, 16. 2826

BUCKS COUNTY COUNCIL.

Applications are invited from qualified ARCHITECTS to fill the following permanent posts on the staff of the County Architect, and to work on a large and interesting building programme, including traditional and new building techniques:—

TWO ASSISTANT ARCHITECTS, A.P.T., Grade V (£620-£670 p.a.).

Applicants should have outstanding design ability.

A weekly allowance of 25s. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications on forms, giving further particulars of the appointments, are obtainable from Mr. F. B. Pooley, County Architect, County Offices, Aylesbury, and returnable by 28th June, 1954. 2900

CORPORATION OF GLASGOW.
ARCHITECTURAL AND PLANNING DEPARTMENT.
ASSISTANT ARCHITECTS.
ASSISTANT QUANTITY SURVEYORS.

Applications are invited from persons having general experience and holding the A.R.I.B.A. qualification or the A.R.I.C.S. qualification. Scale £520-£870 with placing according to age and experience. Posts are superannuable, subject to medical examination. Form of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1.

A. G. JURY,
City Architect and Planning Officer.
2885

NORTH THAMES GAS BOARD.

An ARCHITECTURAL ASSISTANT is required in the Drawing Office of the Chief Engineer's Department, Westminster.

Applicants should have passed the R.I.B.A. Final Examination, should be capable of preparing working drawings and specifications, and supervising the work on contracts. Experience in Design and Planning of industrial buildings would be an advantage.

Starting salary, depending on age and qualifications, will be within the range of £595-£715 per annum, and the successful candidate will be required to join the Staff Pension Scheme.

Applications, stating age and giving full details of qualifications and experience, should be sent to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 666/159. 2975

COLONIAL OFFICE.

Applications are invited for the post of TOWN PLANNER on the staff of the Housing Adviser to the Colonial Office. Candidates should be members of the Town Planning Institute. Some practical experience in a Town Planning Department would be an advantage. The duties of the post would be to carry out research into town planning problems in Colonial territories, and to assist in the tendering of advice on town planning matters under the guidance of the Secretary of State's Honorary Town Planning Adviser, Sir William Holford. The holder of this post would be based at the Building Research Station, Garston, Watford, and would be expected to undertake periodic short visits to Colonial territories. The salary of the post would be fixed within the scale:

£620×£25—£720×£30—£920×£40—£960,

according to the age of the successful candidate. The post carries with it the option of membership of the Colonial Superannuation Scheme. It is the intention that the holder of this post should, after a period of two to three years, be considered for appointment to a suitable town planning post in a Colonial territory.

Application forms for the above post may be obtained from:—The Colonial Office Social Services Department "B," 15, Victoria Street, S.W.1. Closing date for applications: 1st July, 1954. 2962

GOVERNMENT OF NORTHERN IRELAND.
MINISTRY OF FINANCE—DIRECTORATE OF WORKS.
ARCHITECTURAL ASSISTANTS.

Applications are invited from ARCHITECTURAL ASSISTANTS with recognised training and fair experience for unestablished posts in the Chief Architect's Branch. The employment will provide useful experience for those seeking to obtain professional qualifications. Successful candidates will be eligible for consideration for permanent and pensionable posts as vacancies arise and for promotion to a higher grade on their obtaining full professional qualifications.

The inclusive annual salary scale (which is at present under review) is £351 rising to £628. The starting pay of candidates who have passed the R.I.B.A. Intermediate Examination will be £495. Entry points for other candidates will be fixed in relation to their ages, e.g., £351 at age 21; £440 at age 25 or over.

Preference will be given to candidates who served in H.M. Forces in the 1914-18 or 1939-45 wars, provided that such candidates are, or within a reasonable time will be, able to discharge the duties efficiently.

Candidates who are invited to attend for interview will be recouped cost of railway and steamer fares at minimum rates.

Applications, giving date of birth and full details of training and qualifications, should be sent to the Director of Establishments, Ministry of Finance, Stormont, Belfast. 2905

COUNTY BOROUGH OF WEST HAM.
BOROUGH ARCHITECT AND PLANNING OFFICER'S DEPARTMENT.

Applications are invited for the following appointments:—

(1) CHIEF ASSISTANT (TOWN PLANNING). A.P.T., Grade X (£920×£40×£40×£50—£1,050, plus London allowance).

Applicants must be A.R.I.B.A., A.M.T.P.I., and the successful applicant will be required to take charge of the Town Planning Section of the Department. Experience in the following is essential:—

(*a*) The preparation and realisation of a Development Plan for a County Borough;

(*b*) the redevelopment of war damaged and obsolescent areas;

(*c*) the examination of development applications and their presentation to Committee;

(*d*) the preparation of evidence for Public Inquiries and acting as technical witness;

(*e*) the delineation of areas for compulsory acquisition under the Planning and Housing Acts.

Ability to handle negotiations and some experience of public relations work will be an advantage.

(2) SENIOR ASSISTANT (TOWN PLANNING). A.P.T., Grade VIII (£785×£25×£25×£25—£860, plus London allowance.

Applicants must be A.R.I.B.A., A.M.T.P.I. Preference will be given to applicants who have had experience in the redevelopment of obsolescent areas and in the layout of detailed proposals for such areas. Applicants should also be capable of preparing evidence for Public Inquiries.

(3) SENIOR ASSISTANT (TOWN PLANNING). A.P.T., Grade VII (£735×£25×£25×£25—£810, plus London allowance).

Applicants should be A.R.I.B.A., and preference will be given to those with a planning qualification. Applicants should have had some experience in the preparation of layouts for residential areas, and also be capable of giving advice in matters relating to the exercise of architectural control under the Planning Act.

Forms of application are available from Thomas E. North, O.B.E., F.R.I.B.A., Dist.T.P., Borough Architect and Planning Officer, 70, West Ham Lane, Stratford, E.15, and must be submitted by 7th July, 1954. 2973

NATIONAL COAL BOARD—N.W. DIVISION.
QUANTITY SURVEYING ASSISTANT, Grade 2, required. Should have experience in a Quantity Surveyor's office, and able to work up dimensions, abstract, write Bills of Quantities, check accounts, and take site measurements under supervision. Preference to applicants holding the Inter. R.I.C.S. Certificate. Salary according to qualifications and experience within scale £440×£20 to £540 p.a. Applications, stating age, education, qualifications, experience, and recent appointments, to Establishment Officer, 40, Portland Street, Manchester, 1, by 28th June. 2966

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

Applications are invited for the following appointment on the permanent staff of the Regional Architect (additional to that advertised recently with the 18th June, 1954, as closing date):—

ASSISTANT ARCHITECT. The commencing salary will be within the scale £600×£25 (7)×£30 (3)—£865, plus London weighting allowance of £30 p.a. (age 26 and over), rising to £40 p.a. at salary of £801 p.a. Applicants must be Associate Members of the Royal Institute of British Architects, capable of preparing working and detail drawings and specifications, and supervising work on individual projects. Experience of hospital planning and construction an advantage.

Applications, stating age, experience, qualifications, present appointment and salary, together with the names and addresses of three referees, to be sent to the Secretary (S.2), South-West Metropolitan Regional Hospital Board, 11a, Portland Place, London, W.1, marking the application and the envelope "Architectural Staff (2)," not later than 9th July, 1954. 2965

BOROUGH OF WILLESDEN.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.
GRADE A.P.T. VA.

Salary £650×£20—£710 per annum, exclusive of London Weighting.

Applications are invited for the above appointment on the permanent staff of the Borough Engineer and Surveyor from suitably experienced persons who are Associates of the Royal Institute of British Architects or who hold an equivalent qualifications.

Commencing salary will be fixed in accordance with the qualifications and experience of the successful candidate.

The Council is unable to assist with housing.

Full details and form of application may be obtained from the Borough Engineer and Surveyor Town Hall, Dyne Road, Kilburn, London, N.W.6, and should be returned to the undersigned, not later than 10 a.m. on Monday, 28th June, 1954.

R. S. FORSTER,
Town Clerk.

Town Hall, Dyne Road, Kilburn, London N.W.6. 2904

NEW TOWN OF CWMBRAN, MON.

Applications are invited for the following superannuable vacancies in the Chief Architect's Department:—

(*a*) ONE ASSISTANT ARCHITECT.

Salary range: £600×£25—£725.

The commencing salary will be fixed according to the experience and qualifications of the successful applicant.

(*b*) FOUR JUNIOR ASSISTANT ARCHITECTS.

Commencing salary: £525, on range £525×£25—£625.

Candidates for appointment (*a*) should be Associates of the R.I.B.A., with at least 2 years' office experience, and should have had very good experience in house design, construction and layout.

For (*b*) candidates should be either graduate Architects, or have passed the Intermediate Examination of the R.I.B.A. and had 2 years' office experience.

Housing accommodation will be made available in suitable cases, or otherwise lodging expenses in accordance with the Corporation's scale will be paid to married men for a limited period.

Applications, stating age, experience, details of present and former employment (together with applicable salaries), and the names and addresses of two referees, must reach the undersigned by first post on the 28th June, 1954.

J. C. P. WEST, A.R.I.B.A., A.M.T.P.I.,
Chief Architect.

Victoria Street, Cwmbran, Mon. 2945

HER MAJESTY'S COLONIAL SERVICE.
ARCHITECTS FOR MILITARY WORKS, NANYUKI, DEVELOPMENT.
PUBLIC WORKS DEPARTMENT, KENYA.

Required to prepare sketch designs and working drawings for Government buildings, including Schools, Police Stations, Government Offices, Housing, Hospitals, Prisons, Agricultural Buildings, etc. To be in charge of a section dealing with one or more of such group of buildings.

Appointments will be on contract for four years in the salary range £655-£1,320 per annum, point of entry determined by war service and approved experience. Gratuity at the rate of 13½ per cent. of total substantive salary drawn, payable on termination of contract. Cost-of-living allowance of 35 per cent. of salary, subject to maximum of £350 per annum.

Free passages on appointment and on leave for officer, his wife and children up to a maximum cost of three adult passages. Leave at rate of 4½ days for each month of resident service.

Candidates not to exceed 40 years of age, must be A.R.I.B.A., with at least 4 years' post qualification experience in an Architect's office. Administrative and practical supervisory experience will be an advantage.

Apply in writing to the Director of Recruitment, Colonial Office, Sanctuary Buildings, Great Smith Street, London, S.W.1, giving briefly age, qualifications and experience. Mention the reference No. BCD.112/7/011(A). Closing date for receipt of initial enquiries: 21st July, 1954. 2954

LONDON COUNTY COUNCIL.

Hammersmith School of Building and Arts and Crafts. Three TEACHERS as soon as possible:—

(1) For Interior Design, and to take charge of course for N.D.D. (Special Level), under Head of Department. Should be suitably qualified. Industrial experience in design and manufacture essential; teaching experience desirable.

(2) For Architecture. To be Studio Instructor in Design Construction, and able to offer subsidiary lecture subjects. Should be Associate or Fellow of R.I.B.A. Diploma of recognised School of Architecture an advantage.

(3) For Building Science and Maths.; in Diploma and Certificate Courses, and in classes for Structural Engineers, Architects and Surveyors.

Burnham F.E. salary scales, at present: for (1) and (2) (Lecturers), £976×£25—£1,088; for (3) (Assistant, Grade B) within the scale £526×£25—£927. Commencing salary according to age, qualifications and experience.

Application forms from Secretary at School, Lime Grove, Shepherds Bush, W.12, for return by 3rd July. (762) 2953

LONDON COUNTY COUNCIL.
ARCHITECTS DEPARTMENT.

Vacancies for ARCHITECTS in Schools and Housing Divisions. Salary to £721.

Particulars and application forms, from Architect (AR/EK/A/2), County Hall, S.E.1. (374.) 2205

BOROUGH OF BARKING.
DEPARTMENT OF THE BOROUGH ARCHITECT.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited from persons who have passed the R.I.B.A. Intermediate Examination for the appointment of Architectural Assistant, Grade A.P.T., III-V, on the established staff, at a commencing salary of £550 p.a., plus London weighting.

Further particulars and form of application may be obtained from the Borough Architect, Town Hall, Barking. Completed applications should reach the undersigned not later than Friday, 25th June, 1954.

E. R. FARR,
Town Clerk.

Town Hall, Barking, Essex. 2955

CITY OF CAMBRIDGE.
CHIEF ASSISTANT ARCHITECT, GRADE X.

Applications are invited for the above appointment on Grade X (£920-£1,050).

This officer will be responsible to the City Surveyor for the design and construction of all architectural work, including schools, houses, flats, redevelopment schemes, libraries, etc., and will have under his direction an architectural staff of about seventeen assistants.

The appointment is subject to the Scheme of Conditions of Service of the N.J.C. for Local Authorities, and to the provisions of the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination.

Forms of application may be obtained from the City Engineer and Surveyor, Guildhall, Cambridge, and should be returned to him by Monday, the 28th June, 1954.

ALAN H. I. SWIFT,
Town Clerk.

The Guildhall, Cambridge.
June, 1954. 2956

PADDINGTON BOROUGH COUNCIL require ARCHITECTURAL ASSISTANT (A.P.T., III, £580-£625 p.a. inclusive). Candidates should have passed the Intermediate Examination of the R.I.B.A., and must be used to preparing working and detailed drawings and be good draughtsmen. They must also have been engaged on, and interested in, the best contemporary architecture. Write age, qualifications, present and past appointments, to Town Clerk (A.162), Paddington, W.2, by 3rd July, 1954. 2963

HERTFORDSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of Assistant Architects, Grade VII (£735-£810). Previous Local Government experience not essential.

Applications, together with the names of two referees, to County Architect, County Hall, Hertford, Herts., not later than 25th June, 1954. 2925

COUNTY BOROUGH OF SOUTHAMPTON.

Appointment of (*a*) ASSISTANT PLANNING OFFICER, Grade VI (£695-£760), (*b*) QUANTITY SURVEYOR, Grade VI (£695-£760), or Grade VII (£735-£810), according to experience.

Application forms from Borough Architect, Civic Centre, Southampton, to be returned by 28th June, 1954. 2943

COUNTY OF HUNTINGDON.
COUNTY ARCHITECT'S DEPARTMENT.
ARCHITECTURAL ASSISTANT, GRADE V, A.P.T.

Applications are invited for the appointment of an Architectural Assistant, at a salary in accordance with Grade V, A.P.T., of the National Joint Council's Scales, namely £610×£15 (2) and £20 (1) to £670 per annum. Preference will be given to applicants holding suitable qualifications.

The appointment is subject to the provisions of the Local Government Superannuation Acts, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications, experience, present position and salary, together with the names of two persons to whom reference could be made, should be delivered to S. H. Holloway, A.R.I.B.A., County Architect, County Buildings, Huntingdon, in a sealed envelope endorsed "Architectural Assistant," by Friday, 2nd July, 1954.

JOHN KELLY,
Clerk of the County Council.

County Buildings, Huntingdon.
17th June, 1954. 2944

LONDON ELECTRICITY BOARD
ENGINEERING DRAUGHTSMAN

Applications are invited for the above position in the Board's Southern Sub-Area, based at Beckenham, Kent.

Candidates should have had a good general and technical education and be experienced in one or more of the following subjects; engineering drawing; plant lay-out in substations; layouts and site plans of mains work; electrical diagrams.

The post is graded under Schedule "D" of the National Joint Board agreement as Grade 6—£458 to £595 7s. 0d. per annum, inclusive of London Allowance.

Application forms obtainable from Personnel Officer, 46, New Broad Street, E.C.2, to be returned completed within 14 days of the publication date of this advertisement. Please enclose addressed envelope and quote ref.: V/1749/A. 2924

CITY OF BELFAST.
EDUCATION ARCHITECT'S DEPARTMENT.

Applications are invited for the following positions on the staff of the Education Architect's Department.

(1) ARCHITECT CLASS 1 (One vacancy).
Applicants must be Registered Architects with good experience in the design and construction of buildings, particularly schools, and be capable of supervising the work of a section of the Department.
The Salary Scale for the position is £655x£25-£955x£15-£970 per annum. Minimum linked to age 26, one increment for each year up to 32.

(2) ARCHITECT CLASS 2 (Seven vacancies).
Applicants must be Registered Architects.
The Salary for the position is £550x£25-£825 per annum. Minimum linked to age 26, one increment for each year up to 32.

Superannuation contributions will be payable at the rate of approximately 6 per cent. of remuneration.

Applicants wishing to be considered for both grades may so state on the form of application and need only complete one form.

Forms of application and conditions of appointment may be obtained from the Education Office, Academy Street, Belfast, on personal application or by sending stamped addressed foolscap envelope. Applications, in envelopes suitably endorsed, should reach the undersigned not later than Friday, 25th June, 1954.

JOHN DUNLOP,
Town Clerk.

City Hall, Belfast.
2nd June, 1954. 2931

SHROPSHIRE EDUCATION COMMITTEE.
SHREWSBURY TECHNICAL COLLEGE

Principal: L. B. Daley, M.A., B.Sc., A.M.I.I.A., F.C.C.S.

A PART-TIME TEACHER OF ARCHITECTURE is required from September, 1954 to teach one day a week up to Inter. R.I.B.A., in the School of Art. The present holder of the post, a practising architect in Birmingham, is leaving to take a full-time teaching post. Salary and travelling expenses will be payable on the Authority's scale for part-time teachers. Application forms (returnable by 24th June) and further particulars from the Principal. 2932

CITY OF CARDIFF
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the following appointment in the City Surveyor's Department:
Architectural Assistant (Housing) A.P.T. Grade 6 (£695-£760 per annum).
Experience of Flat Construction will be an advantage.
Candidates should possess the minimum qualifications and experience prescribed by the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services for posts in the above mentioned Grade.
General Conditions of Appointment may be obtained from the undersigned.
Applications, accompanied by the names and addresses of three referees and endorsed "Architectural Assistant (Housing) A.P.T. Grade 6" must be delivered to me not later than the 26th June, 1954.

S. TAPPER-JONES,
Town Clerk.

City Hall, Cardiff.
June, 1954. 2926

STAFFORDSHIRE COUNTY COUNCIL
EDUCATION COMMITTEE

APPLICATIONS are invited for the following appointments:—

(A) SENIOR QUANTITY SURVEYOR, A.P.T. Grade X. (Salary scale £920-£1,050.)
Members of the Royal Institution of Chartered Surveyors (Sub Division III Quantities) or hold equivalent qualifications, be thoroughly experienced in the preparation of preliminary estimates, management of contracts, pricing and agreeing final accounts, and both capable and experienced in the control of technical staff dealing with finalisation of accounts.

(B) SENIOR ASSISTANT QUANTITY SURVEYORS, A.P.T. Grade VIII and IX (£785-£960), depending on the experience of applicants, who must be members of the Royal Institution of Chartered Surveyors (Sub Division III Quantities) or hold equivalent qualifications, and be experienced in the preparation of preliminary estimates, interim valuation pricing and agreeing final accounts.

Forms of Application and further particulars are obtainable from:—A. C. H. Stillman, Esq., F.R.I.B.A., County Education Architect, Green Hall, Lichfield Road, STAFFORD, to whom the completed form must be returned within 14 days of the appearance of this advertisement.

T. H. EVANS,
Clerk of the County Council.
2928

NORTHAMPTON.
ASSISTANT ARCHITECT (HOUSING), A.P.T., V (£620-£670).

Particulars of appointment and form of application, to be returned by 3rd July, may be obtained from the Borough Architect, Guildhall, Northampton.

C. E. VIVIAN ROWE, *Town Clerk.*
2964

STAFFORDSHIRE COUNTY COUNCIL
EDUCATION COMMITTEE

Appointment of Structural Engineer A.P.T. Grade X. (Salary scale £920-£1,050.)

Applications are invited from STRUCTURAL ENGINEERS, with knowledge of steel framed buildings and reinforced concrete structures. Experience in design of educational buildings an advantage.

Forms of Application may be obtained from:—A. C. H. Stillman, Esq., F.R.I.B.A., County Education Architect, Green Hall, Lichfield Road, STAFFORD, the completed forms to be returned within two weeks of the publication of this advertisement.

T. H. EVANS,
Clerk of the County Council.

2927

PERTH AND KINROSS JOINT COUNTY COUNCIL require a JUNIOR ARCHITECTURAL ASSISTANT for New School Building Programme. Salary £490-£535 with placing according to experience. Applicants should have reached R.I.B.A. Intermediate standard or equivalent. Particulars and form of application from County Clerk, County Offices, York Place, Perth. Applications to be lodged by 26th June, 1954. 2929

LANCASHIRE COUNTY COUNCIL—
PLANNING DEPARTMENT.

Planning Assistant A.P.T. Grades V-VI (£620-£760) required at Manchester. Applicants should be qualified architects, preferably with experience in planning; a planning qualification in addition will be an advantage. Salary within grade according to qualifications and experience. Applications, giving age, qualifications, experience, present appointment and salary and two referees to County Planning Officer, East Cliff County Offices, Preston, by 30th June, 1954. 2930

MIDDLESEX COUNTY COUNCIL—COUNTY ARCHITECT'S DEPARTMENT

JUNIOR ARCHITECTURAL ASSISTANTS required. Salary 16 and under, £195; 17, £205; 18, £220; 19, £245; 20, £265; 21, £295; 22, £320 p.a., etc. Unestablished for 6 months' probation, then transfer to established, pensionable staff considered. Prescribed conditions. Application forms (stamped addressed foolscap envelope) from County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1, returnable by 28th June (quote N.609 AJ). Canvassing disqualifies. 2922

BOROUGH OF ILFORD
BOROUGH ENGINEER'S DEPARTMENT.
ARCHITECTURAL ASSISTANT, GRADE A.P.T. VI

Applicants should be Associate Members of the R.I.B.A., have a thorough knowledge of architectural works with practical experience in the design and development of buildings of all types, preference being given to candidates with specific experience in post-war housing schemes, including flats.

Post permanent and pensionable. Salary in accordance with Grade A.P.T.VI, viz., £695-£760 per annum plus appropriate London Weighting.

The Council is prepared, if necessary, to provide housing accommodation in connection with this appointment.

Forms of application obtainable from the Town Clerk, Town Hall, Ilford, should be returned by Monday, 21st June. 2923

AMENDED ADVERTISEMENT.
WORCESTERSHIRE COUNTY COUNCIL.

Applications are invited for architectural assistants, Grades APT. IV-VI (Grade IV £580-£625; Grade V £620-£670; Grade VI £695-£760), according to ability and experience.

Application forms from L. C. Lomas, F.R.I.B.A., County Architect, 14, Castle Street, Worcester. (P. 181.) 2980

MIDDLESEX COUNTY COUNCIL—COUNTY ARCHITECT'S DEPARTMENT.

(a) ARCHITECTURAL ASSISTANT A.P.T II. (£520-£565 p.a. plus London Weighting.)

(b) JUNIOR ARCHITECTURAL ASSISTANT A.P.T. I. (490-£535 p.a. plus London Weighting.)

For (a) should have inter. exam. of R.I.B.A. Both posts experience of Educational buildings an advantage. Appointments at grade minimum. Established, pensionable, subject to medical assessment and prescribed conditions. Application forms (stamped addressed foolscap envelope) from County Architect, 1, Queen Anne's Gate Bldgs., Dartmouth Street, S.W. 1, returnable by 28th June (quote N. 641 A.J.). Canvassing disqualifies. 2979

LINDSEY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Vacancy on the permanent staff for:—

(*a*) Assistant A.P.T. IV, £580-£625. Candidates must have passed Intermediate R.I.B.A.

(*b*) Assistant Quantity Surveyor A.P.T. Va and VI, £650-£760. Candidates must be A.R.I.C.S.

N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any member or senior officer of the Council.

Applications stating age, qualifications and experience, with the names of two persons to whom reference can be made, to be sent to the undersigned by 22nd June, 1954.

A. RONALD CLARK, A.R.I.B.A., A.M.T.P.I.
County Architect.

County Offices, Lincoln. 2978

Architectural Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

SENIOR AND JUNIOR ARCHITECTURAL ASSISTANTS and Draughtsmen or women required in busy office in the Home Counties. Some experience essential. Large varied practice. Please state experience and salary required. Box 2137.

A SENIOR ARCHITECTURAL ASSISTANT required, full experience in preparation of Working Drawings, Details, and supervision of office and Industrial Buildings in the London Area. Good knowledge of construction and design essential. Apply in writing giving full particulars of qualifications, age, experience and salary required to Box 9829.

CO-OPERATIVE WHOLESALE SOCIETY, LTD., ARCHITECT'S DEPARTMENT, LONDON.

APPLICATIONS are invited for the following appointments:—

(*a*) ASSISTANT ARCHITECTS, of Intermediate and Final R.I.B.A. standard (salary range: £320-£680 per annum, according to age and experience), for work on varied and interesting projects.

(*b*) SHOPFITTING DRAUGHTSMAN. Applicants should have wide experience in store planning and design.

The appointments are permanent and pensionable, and offer prospects of up-grading.

Applications, stating age, experience, qualifications and salary required, to W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leman Street, London, E.1. 2754

ECCLESIASTICAL ARCHITECT has vacancy for an ASSISTANT of Intermediate Standard who would be interested in old and new church work. Lawrence H. Bond, 11, Elmer Street, Grantham, Lincs. 2650

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required at once in busy Southampton office. Previous office experience essential for senior post, and some office experience of advantage for junior. Salaries according to ability. Write, giving experience and present salary. Box 2898.

SENIOR ARCHITECT required to take over large job. Ring Liberty 8181; or write: George Watt, A.R.I.B.A., 146, Mostyn Road, Merton Park, S.W.19. 2878

CHIEF ASSISTANT required for Architect's Department of a large firm of Building and Civil Engineering Contractors. Applicants must be quick and accurate draughtsmen, have a sound knowledge of building construction, and a flair for design in both the domestic and industrial field. The appointment is permanent, and a pension scheme is in operation. The Department has a large and interesting variety of work in hand in the development of their own estates. Apply in writing, stating age, qualifications, and details of experience and posts held, in chronological order, and present salary, to Messrs. George Calverley & Sons (Contractors), Ltd., Evington Valley Road, Leicester. 2883

REEMA CONSTRUCTION, LTD., Milford Manor, Salisbury, require:—

(1) Young ARCHITECT, to train for development work in the Reema system of construction. £500 per annum minimum.

(2) Competent DRAUGHTSMEN, with sound experience in the detailing of buildings. £450 to £500 per annum. 2788

ARCHITECTURAL ASSISTANTS required. Applicants should have completed their National Service and have had at least one year's office experience. Apply in writing, stating age, training and experience to the Chief Staff Architect, Ilford Limited, Romford, Essex. 2839

REQUIRED for Architects' office, Central London area, young qualified ASSISTANTS interested in design and construction. Write, stating experience and salary required. Box 2325.

ARCHITECTURAL ASSISTANT required by Eastern Counties Architect. Inter. R.I.B.A. standard. Salary: £500 per annum. Send details of experience, age, etc., to Box 2811.

ARCHITECTURAL ASSISTANT, of about Intermediate standard, required for Plymouth firm of Architects. Interesting varied work. Details of experience and salary expected to Box 2920.

ARCHITECTURAL ASSISTANT urgently required, experienced in preparation of Working Drawings, Details, Specifications and supervision, for South-West London office. Apply in writing, giving full particulars of experience, age, and salary required, to Box 2912.

WANTED immediately in office of Architect dealing with domestic work for a London housing company, ARCHITECTURAL ASSISTANT of above R.I.B.A. standard, able to prepare designs, working drawings, and specifications. Salary up to £650 p.a. according to experience and capabilities. Pension scheme. Write—Box 2869.

A. M. GEAR, A.R.I.B.A., at 12, Manchester Square, London, has vacancies for ARCHITECTURAL ASSISTANTS of intermediate or final standard interested in the design of prefabricated structures. Apply above address. 2864

ARCHITECT.—Simon-Carves, Ltd., have a vacancy for a young qualified Architect for industrial work. Working conditions and scope are excellent. A D.O. Bonus Scheme and Pension Fund are in operation. Apply in writing, quoting ref. (NX59), to Staff and Training Division, Simon-Carves, Ltd., Cheadle Heath, Stockport. 2946

ASSISTANT required, Inter./Final standard. Previous office experience essential, mainly for working drawings, but ample opportunities for design offered to keen and capable applicant. Brief particulars to A. G. Paton, A.I.A.A., L.R.I.B.A., 25, Berkeley Square, W.1. 2949

ASSISTANT required for preparation of working drawings, details and specifications for work of general character. Good experience desirable. Written applications, giving particulars and salary required, to W. H. Saunders & Son, 49, Commercial Road, Portsmouth. 2950

ARCHITECTURAL ASSISTANT (JUNIOR) required in Architect's Department. Interesting work and good prospects. Apply Staff Architect, Greenall Whitley & Co., Ltd., Wilderspool Brewery, Warrington. 2952

FIRST-CLASS prospects for keen junior assistant in Eastbourne practice. Previous office experience essential. Applicant must have reached Intermediate standard, have good draughtsmanship, knowledge of construction and sense of design. Apply with sample of freehand lettering, stating salary required, to Box 2981.

ARCHITECTURAL ASSISTANT, Intermediate R.I.B.A. standard, with office experience, required in small private office. Write, stating experience and salary required, to S. W. Wendes, 29a, Lugley Street, Newport, I.W. 2934

WESTWOOD, SONS & HARRISON, F./F.R.I.B.A., require SENIOR ASSISTANT, with good all-round experience. Design ability essential. Salary £750 approx. Written applications only, to 46, Baker Street, W.1. 2935

TWO Inter.-standard ASSISTANTS required in busy West End office. Salary: £600-£650 p.a. Long term prospects. Archard & Hardy, Sloane 9225. 2936

ARCHITECTURAL ASSISTANT. Final standard, for small busy office in Westminster. Considerable office experience, good draughtsman, and capable managing medium contracts. Details and salary to Box 2939.

COMPETENT ARCHITECTURAL ASSISTANT, Intermediate standard, required in small London office. Able to take charge of small contracts. Reply, stating experience and salary required, to Box 2940.

ARCHITECTURAL ASSISTANTS (TWO) required in London office. Intermediate standard—office experience essential. Walters & Kerr Bate, 14, Gray's Inn Square, W.C.1. HOL 9850. 2938

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For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Education, Legal Notices, Miscellaneous Property, Land and Sales lxxx, lxxxi, lxxxii, lxxxiii.

PAGE
xxiii
lii
lxxviii

xxxix
xlvii
xx

xxxvii
lxxvii
lxxi
lxxii
viii
xxx
xxv
lxxviii
xvii, lxxix
liv

iv
xxxiv

lxxxiii
lxii
l
xxxviii
lviii

lxxxii
xxxviii
d) lxxxiii

lxxv
lxxii
xlv

xliv

xxxii
xxx
lxxxiii

lxv
lvi
lii
lxiv
lxxxiii
lxxxiii
v
lxxvi

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